

Thermal Transfer G-Series™

Desktop Thermal Printer



Printer Service Manual



©2008 ZIH Corp. The copyrights in this manual and the software and/or firmware in the label printer described therein are owned by ZIH Corp. Unauthorized reproduction of this manual or the software and/or firmware in the label printer may result in imprisonment of up to one year and fines of up to \$10,000 (17 U.S.C.506). Copyright violators may be subject to civil liability. All trademarks and registered trademarks are property of their respective owners. All rights reserved.

This product may contain ZPL®, ZPL II®, and ZebraLink™ programs; Element Energy Equalizer™ Circuit; E³®; and Monotype Imaging fonts. Software ©ZIH corp. All rights reserved worldwide.

ZebraLink and all product names and numbers are trademarks, and Zebra, the Zebra logo, ZPL, ZPL II, Element Energy Equalizer circuit, and E3 Circuit are registered trademarks of ZIH Corp. All rights reserved worldwide. Monotype®, Intellifont® and UFST® are trademarks of Monotype Imaging, Inc. registered in the United States Patent and Trademark Office and may be registered in certain jurisdictions.

CG Triumvirate is a trademark of Monotype Imaging, Inc. and may be registered in some jurisdictions.

TrueType® is a trademark of Apple Computer, Inc. registered in the United States Patent and Trademark Office and may be registered in certain jurisdictions.

Proprietary Statement

This manual contains proprietary information of Zebra Technologies Corporation and its subsidiaries (“Zebra Technologies”). It is intended solely for the information and use of parties operating and maintaining the equipment described herein. Such proprietary information may not be used, reproduced, or disclosed to any other parties for any other purpose without the express written permission of Zebra Technologies.

Product Improvements

Continuous improvement of products is a policy of Zebra Technologies. All specifications and designs are subject to change without notice.

Liability Disclaimer

Zebra Technologies takes steps to ensure that its published Engineering specifications and manuals are correct; however, errors do occur. Zebra Technologies reserves the right to correct any such errors and disclaims liability resulting therefrom.

Limitation of Liability

In no event shall Zebra Technologies or anyone else involved in the creation, production, or delivery of the accompanying product (including hardware and software) be liable for any damages whatsoever (including, without limitation, consequential damages including loss of business profits, business interruption, or loss of business information) arising out of the use of, the results of use of, or inability to use such product, even if Zebra Technologies has been advised of the possibility of such damages. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

Canadian DOC Compliance Statement

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

FCC Compliance Statement

This device complies with Part 15 rules. Operation is subject to the following two conditions:

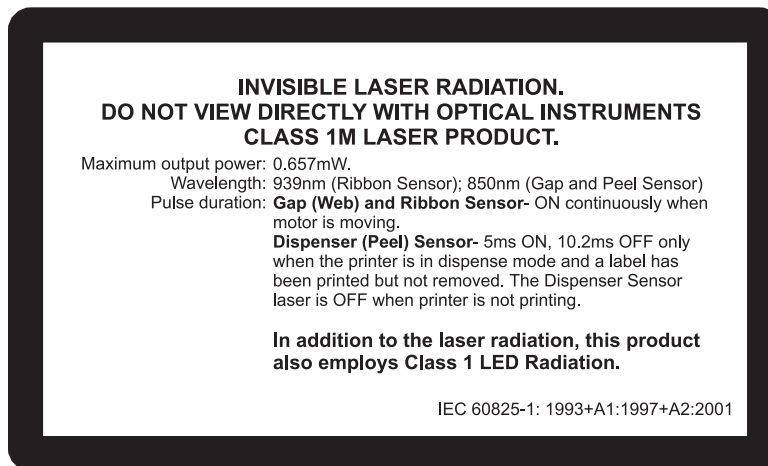
1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for Class B Digital Devices, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the product manuals, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, the user is encouraged to do one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced RF service technician for help.

The user is cautioned that any changes or modifications not expressly approved by Zebra Technologies could void the user's authority to operate the equipment. To ensure compliance, this printer must be used with fully shielded communication cables.

G Series Printers



Caution • CLASS 1M LASER PRODUCT

- Viewing the laser output with certain optical instruments (for example, eye loops, magnifiers and microscopes) within a distance of 100mm may pose an eye hazard.
- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- Do not tamper or attempt to repair any sensor inside this product. No serviceable sensors inside.
- Do not stare into Gap (Web) or Dispenser (Peel) sensors. Avoid possible exposure to hazardous laser radiations.

Environmental Management



Do not dispose of this product in unsorted municipal waste. This product is recyclable, and should be recycled according to your local standards.

For more information, please see our website at:

Web address: www.zebra.com/environment

Activating Computer Video

If you are reading this manual on-line (that is, viewing a computer file that has portable document format), you can click on the picture or graphic next to the movie icon (shown below) to play a video file that meets the standards of the Moving Picture Experts Group.



Preface



This section provides you with contact information, document structure and organization, and additional reference documents.

Contacts

You can contact Zebra Technologies at any of the following:

Visit us at: www.zebra.com

Our Mailing Addresses:

Zebra Technologies Corporation

333 Corporate Woods Parkway

Vernon Hills, Illinois 60061.3109 U.S.A

Telephone: +1 847.634.6700

Fax: +1 847.913.8766

Zebra Technologies Europe Limited

Dukes Meadow

Millboard Road

Bourne End

Buckinghamshire SL8 5XF, UK

Telephone: +44 (0)1628 556000

Fax: +44 (0)1628 556001

Support

You can contact Zebra support at:

Web Address: www.zebra.com/SS/service_support.htm

Note • The web address is case-sensitive.

US Phone Number +1 847.913.2259

UK/International Phone Number +44 (0)1628 556000

Environmental Management



Do not dispose of this product in unsorted municipal waste. This product is recyclable, and should be recycled according to your local standards.

For more information, please see our website at:

Web address: www.zebra.com/environment

Document Conventions

The following conventions are used throughout this document to convey certain information:

Alternate Color (online only) Cross-references contain links to other sections in this guide. If you are viewing this guide online, click the [blue text](#) to jump to its location.

Command Line Examples All command line examples appear in `Courier New` font. For example, type the following to get to the Post-Install scripts in the `bin` directory:

```
Ztools
```

Files and Directories All file names and directories appear in `Courier New` font. For example, the `Zebra.tar` file and the `/root` directory.

Cautions, Important, Note, and Example



Caution • Warns you of the potential for electrostatic discharge.



Caution • Warns you of a potential electric shock situation.



Caution • Warns you of a situation where excessive heat could cause a burn.



Caution • Advises you that failure to take or avoid a specific action could result in physical harm to you.

Caution • Advises you that failure to take or avoid a specific action could result in physical harm to the hardware.



Caution • Advises you need to wear protective eyewear.



Important • Advises you of information that is essential to complete a task.



Note • Indicates neutral or positive information that emphasizes or supplements important points of the main text.



Example • Provides an example, often a scenario, to better clarify a section of text.

Tools • Tells you what tools you need to complete a given task.

Related Documents

The following documents might be helpful references:

- *GX420t / GX430t User Guide*
- *GK420t User Guide*
- *ZPL II® Programming Guide*
- *EPL® Programmer's Guide*



Notes • _____

Contents



Contacts	v
Support	vi
Environmental Management	vi
Document Conventions	vi
Related Documents	vii
1 • Introduction	1
Models	1
Packaging	2
Preparing a Static-Safe Work Area	2
Environmental and Shock Protection	2
2 • Cleaning and Maintenance	3
Cleaning	4
Cleaning the Printhead	5
Cleaning the Media Path	7
Sensor Cleaning	8
Platen Cleaning and Replacement	10
3 • Troubleshooting	15
Status Light Descriptions	16
Status Light Error Resolutions	16
Print Quality Problems	18
Determining Printer Configuration	21
Thermal Printing	21
Modes of Printing	22
Print Media Types	22
Determining Thermal Media Types	24

Replacing Supplies	24
Adding a New Transfer Ribbon	24
Replacing a Partially Used Transfer Ribbon	25
Adjusting the Print Width	25
Adjusting the Print Quality	25
Media Sensing	26
Ribbon Overview	27
When to Use Ribbon	27
Coated Side of Ribbon	27
Ribbon Test with Adhesive	27
Ribbon Scratch Test	28
Manual Calibration	29
Troubleshooting Tests	30
Printing a Configuration Label	30
Recalibration	30
Resetting the Factory Default Values	31
Communications Diagnostics	31
Feed Button Modes	33
4 • Required Tools	35
5 • Replacing Parts	37
Repair Path for Transfer Ribbon Printers	38
Replacing the Window	39
Replacing the Platen	40
Replacing the Printhead	41
Replacing the Top Cover	43
Replacing the Feed Switch Circuit Board	44
Replacing the LCD/Feed Switch Circuit Board	45
Replacing the Upper Media Sensor	46
Replacing the Bottom Case and Back Panel	48
Replacing the Main Logic Board Circuit Board	50
Replacing the Battery	51
Replacing the Fuse	52
Replacing the Head Up Sensor	53
Replacing the Lower Fixed Gap/Blackline Sensor	54
Replacing the Motor	55
Replacing the Lower Moveable Gap/Blackline Sensor	57
Replacing the Ribbon Out Sensor	58
Replacing the Standard Bezel	60
Replacing the Dispenser (Peel Option) Bezel	61
Replacing the Cutter (Option)	63
Replacing the Hinges	65

Replacing the Ribbon Carriage 66

Replacing the Cover Assembly 68

Replacing the Print Mechanism 69

6 • Cable Routing 71

 Print Mechanism..... 71

 Main Printed Circuit Board Assembly..... 76



Notes • _____



Introduction

If you are a field engineer or technician, this manual helps you with routine maintenance, troubleshooting and procedures for replacing parts for repair.

Follow the parts replacement procedures as closely as possible. If you are unsure of any procedure, please contact your service representative or call the products technical support group at Zebra Technologies Corporation.

Zebra Technologies stocks all replacement parts for the printer. Be sure your facility stocks sufficient parts for the printer so that scheduled maintenance can take place in a timely manner.

Models

There are several models of the printer, each of which look similar but have different power modules and firmware.

- The GX printer models have 100 watt power supplies.
- The GK printer models have 70 watt power supplies.
- The GX printer 100 watt power supply fully supports both models, but the GK 70 watt power supply may have stalling or light print if used on the on GX printers.

Packaging

Printers are carton shipped and wrapped inside a protective bag. Keep all packing materials in case you need to reship the printer later or store the printer for any length of time.

Preparing a Static-Safe Work Area

Prepare a static-safe work area before opening the printer for repair. The area must include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for the technician. ESD protective devices are available from most electronic supply stores or by contacting 3M corporation at (800) 328-1368

Environmental and Shock Protection

Extreme temperature and humidity fluctuations or mishandling can damage the printer and power supply.

Allow 30 minutes or more before opening the printer's plastic bag. This time allows the printer to stabilize temperature especially after storage in a cool, dry location and then placed in a warmer, more humid location. Warm, humid air condenses on the cool components of the printer and this condensation may damage the components.

Move the printer carefully. Mechanical damage can certainly result from falls or rough handling.



Cleaning and Maintenance

The printers are manufactured and tested under a strict quality management program. Zebra Technologies uses only high quality components and materials in its printers. Although only minimal routine maintenance is required, following these simple maintenance guidelines will ensure longer life with quality printing performance.

Cleaning

When you clean the printer, use one of the following supplies that best suits your needs:

Cleaning Supplies	Order Quantity	Intended Purpose
Cleaning pens (105950-035)	Set of 12	Clean printhead
Cleaning swabs (105909-057)	Set of 25	Clean media path, guides and sensors

You can obtain cleaning supplies at www.zipzebra.com.

The cleaning process takes just a couple of minutes using the steps outlined below.

Printer Part	Method	Interval
Printhead	Let the printhead to cool for a minute, then use a new cleaning pen to swab the dark line on the printhead cleaning from the center to the outside edges of the printhead. See Cleaning the Printhead on page 5	After every roll of media using direct thermal printing. When using ribbon: after every roll of ribbon; when using direct thermal: after every roll of media.
Platen roller	Remove the platen roller to clean. Clean the roller thoroughly with 90% medical-grade alcohol and a cleaning swab or lint-free cloth. See Platen Cleaning and Replacement on page 10	As needed.
Peel bar	Clean it thoroughly with 90% medical-grade alcohol and a fiber-free cleaning swab.	
Media path	Let alcohol dissipate and the printer dry completely.	
Exterior	Water-dampened cloth.	
Interior	Gently brush out printer.	



Caution • Adhesives and coatings from the media can over time transfer onto the printer components along the media path including the platen and printhead. This build-up can accumulate dust and debris. Failure to clean the printhead, media path and platen roller could result in inadvertent loss of labels, label jams and possible damage to the printer.



Important • Using too much alcohol can result in contamination of the electronic components requiring a much longer drying time before the printer will function properly.

Cleaning the Printhead

Always use a new cleaning pen on the printhead (an old pen carries contaminants from its previous uses that may damage the printhead).



Caution • The printhead becomes hot while printing. To protect from damaging the printhead and risk of personal injury, avoid touching the printhead. Use only the cleaning pen to perform maintenance.

When you load new media, you can also clean the printhead.

1. Rub the cleaning pen across the dark area of the printhead. Clean from the middle to the outside. This will move adhesive transferred from the edges of media to the printhead outside of media path.
2. Wait one minute before closing the printer.

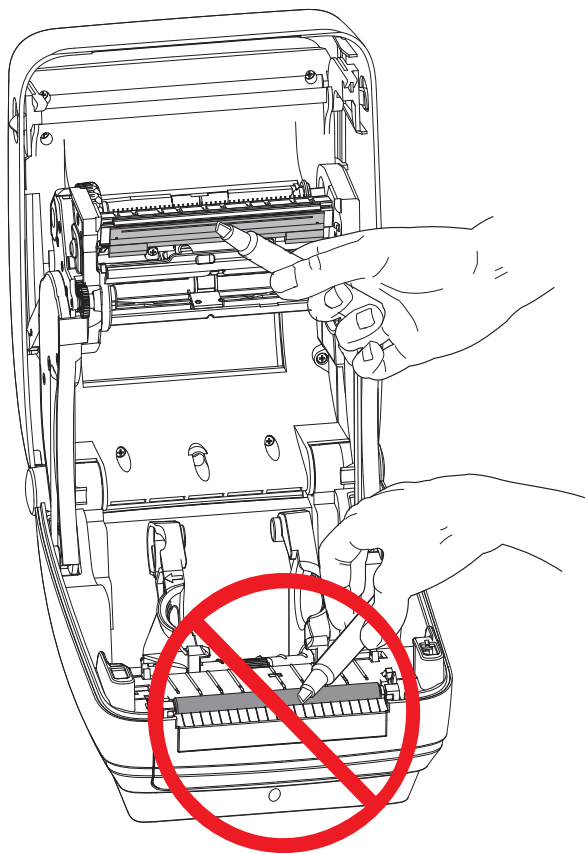


Figure 1 • Cleaning the Printhead

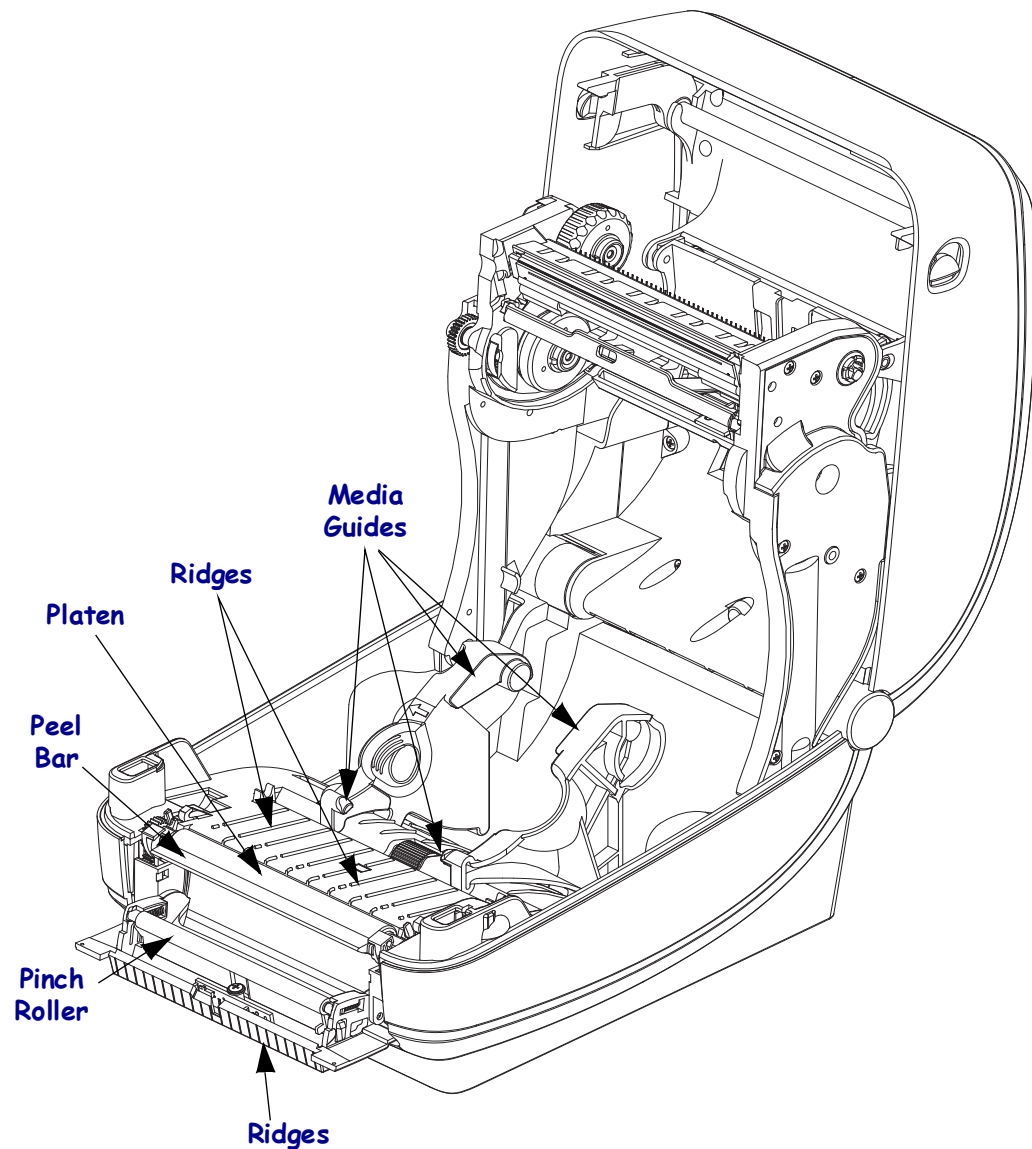


Cleaning the Media Path

Use a cleaning swab to remove debris, dust or crust that has built-up on the holders, guides and media path surfaces.

1. Use the alcohol in the cleaning swab to soak the debris to break up the adhesive.
2. Wipe the ridges to remove accumulated debris.
3. Wipe the inside edges of both edge guides to remove any built-up residue.
4. Wait one minute before closing the printer.

Discard the cleaning swab after use.



Sensor Cleaning

Dust can accumulate on the media sensors.

1. Gently brush away dust; if necessary, use a dry swab to brush away dust. If adhesives or other contaminants remain, use an alcohol moistened swab to break it up.
2. Use a dry swab to remove any residue that may be left from the first cleaning.
3. Repeat steps 1 and 2 as required until all residue and streaks are removed from the sensor.

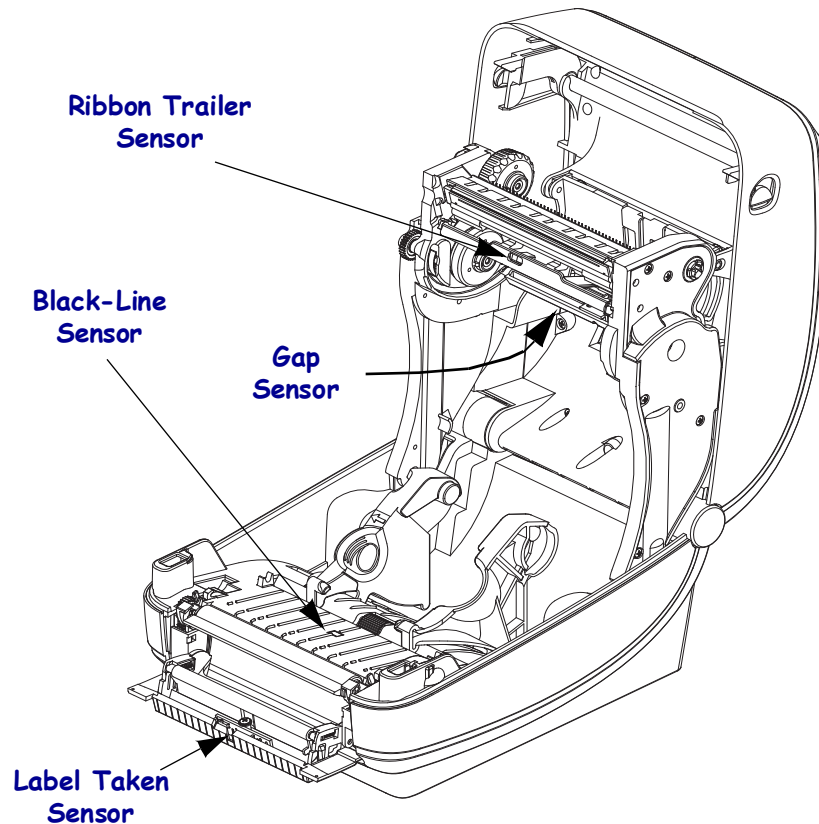


Figure 2 • Cleaning the Media Path and Sensors



Allow the printer to dry for one minute before closing the dispenser door, media cover or loading labels.

Platen Cleaning and Replacement

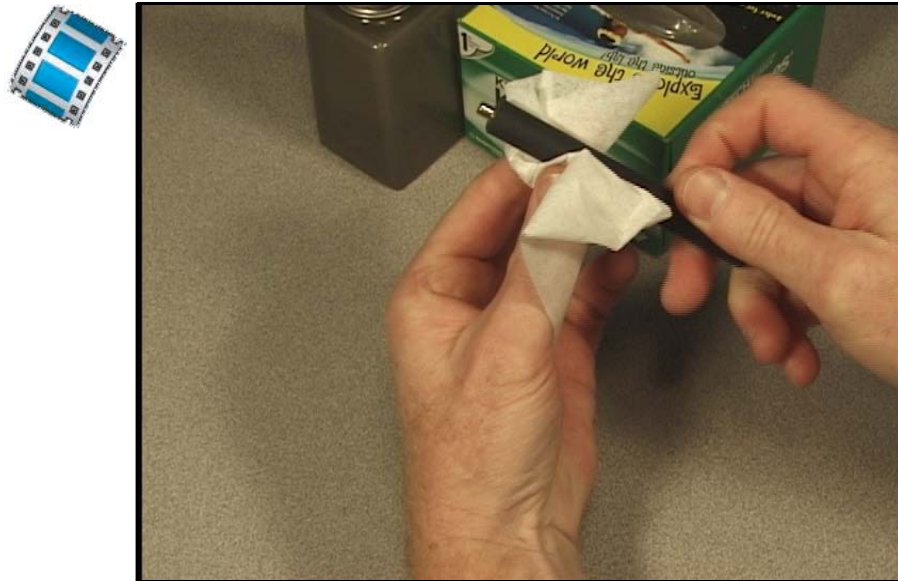
The standard platen (drive roller) normally does not require cleaning. Paper and liner dust can accumulate without effecting print operations. Contaminates on the platen roller can damage the printhead or cause the media to slip or stick when printing. Adhesive, dirt, general dust, oils and other contaminants should be cleaned immediately off the platen.

Clean the platen (and media path) whenever the printer has significantly poorer performance, print quality or media handling. The platen is the print surface and drive roller for your media. If sticking or jamming continues even after cleaning, you must replace the platen.

The platen can be cleaned with a fiber-free swab (such as a Texpad swab) or a lint free, clean, damp cloth very lightly moistened with medical grade alcohol (90% pure or better).

1. Open the cover (and dispenser door). Remove media from platen area.
2. Push small platen bearing latch tabs, sticking up from the platen bearing well's on the right and left sides, out slightly and then rotate them up.
3. Lift the platen out of the printer's bottom frame.
4. Clean the platen with the alcohol moistened swab. Clean from the center out. Repeat this process until the all of the roller surface has been cleaned. Don't scrub or scrape the platen or use tools. Dry the platen and repeat a second time with a new swab. If there has been heavy adhesive build-up or label jam, repeating this process with a new swab helps to remove residual contaminants. Adhesives and oils, for example, may be thinned by the initial cleaning but not completely removed. Discard the cleaning swabs after use - do not reuse.
5. Install the platen in the printer. Make sure the bearings and gear are on the platen shaft.
6. Align the platen with the gear to the left and lower it into the printer's bottom frame.
7. Rotate the platen bearing latch release tabs down on the right and left sides towards the rear of the printer and snap them into place.

Figure 3 • Cleaning the Platen Roller



Allow the printer to dry for one minute before closing the dispenser door, media cover or loading labels.

Cleaning the Cutter

The Zebra desktop printer cutters are designed to require little to no maintenance under normal use.



Caution • Never operate the printer with the cutter bezel removed.



Warning • There are no operator serviceable parts in the cutter unit. Only Zebra authorized service personnel should remove the cutter cover (bezel).

Never attempt to insert objects or fingers in to the cutter mechanism.

Important • Tools, cotton swabs, solvents (including alcohol), etc. all may damage or shorten the cutter's usable life or cause the cutter to jam.

Cutter Facts

- The printer's cutter mechanisms are rated for up to a million cuts at rated paper weight (density/hardness). Higher paper weights than the rated weight can cause the cutter blade to dramatically wear out quicker. The rated paper weights versus cutters designed function (full – standard option, partial – custom option, etc.) will also affect the cutter's rated paper weight and cutter life at those weights.
- The cutter is not designed to cut adhesive backed media, only label liners. Cutting through adhesive backed media normally will jam the cutter blade over time by leaving adhesive deposits. Common adhesives such as acrylic and gum will build up on the fixed blade of the cutter. With the cutter's tight design tolerances required to deliver an accurate clean cut every time, the cutter can not tolerate the balls of gum or fine layers of hardened adhesives like the acrylic, building up on the fixed cutting blade. These materials can push the moving blade at an angle to the fixed blade causing the blade to bind.
- The printer uses a cutter jam detection algorithm to reverse a jammed cutter and flag a media error condition (with a red printer status LED and via printer interface communication). Cutting adhesive backed media, unapproved non-paper media or paper weights exceeding the rated paper range of the cutter are typically the cause of cutter jams.

Basic User Cutter Maintenance

User maintenance consists of 'dry cutting' the printer five times without paper in the cutter and can be preformed by the operator. This operation scrapes the fixed blade surface of contaminants when used periodically. It should be used immediately after the cutter has accidentally cut a label(s) instead of the liner. Do not wait and let adhesives set and harden or collect and combine with other contaminants. Do not remove the bezel for this procedure.

1. Send the printer five EPL Cut Immediate Commands (**C**) without media loaded in the printer.

Cutter Cleaning



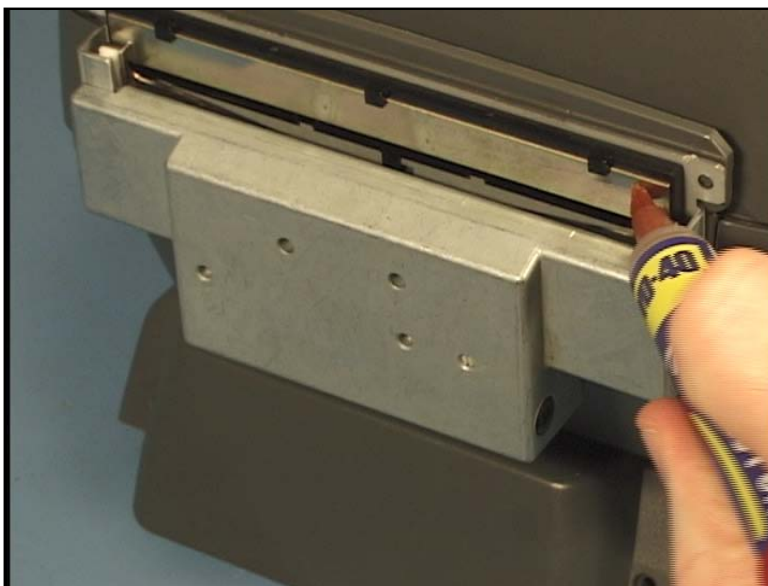
Caution • Keep all tools out of the three access holes (used at the manufactory to adjust potentiometers on the cutter mechanism). *These are not field-serviceable points.*



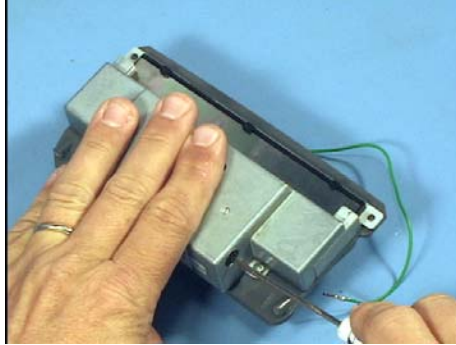
Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

1. Turn the printer over. Use a #1 Philips screwdriver to remove the two screws securing the cutter bezel to the printer's cutter mechanism. Lift the cutter bezel off the top of the cutter.
2. Use a WD-40 Multi-Pen (No Mess Pen), which contains a felt-like tip which becomes saturated with WD-40 when pressed. Wipe the tip back and forth at the edge of, and then moving into the adhesive areas. Be careful not to over-saturate the cleaning pen. Excess solvents will need to be removed by doing multiple basic user cutter maintenance 'dry cut' cleaning operations.

It is recommend that cleaning of only the fixed blade. Experience has shown that there will be little or no adhesive build-up on the moving blade.



3. You may clean the moveable blade if there is visible contaminants on the top of the blade. Use the cutter blade's actuator screw on the lower right side of the cutter body to move the blade up and down. Raise and lower the blade by turning the actuator screw counter-clockwise. Always leave the blade in the lowered, ready to cut position.



4. Replace the cutter bezel and secure it with the two screws.
5. Make 3-5 cut cycles to media that is as wide as the maximum media width the printer supports. This will wipe excess solvent off the blades.



Troubleshooting

This section provides information about printer error reporting that you might need for printer troubleshooting. Assorted diagnostic tests are included.

Status Light Descriptions

What the Status Light is Telling You		
LED Status and Color	Printer Status	For a Resolution, Refer to Number:
Off	Off	1
Solid Green	On	2
Solid Amber	Stopped	3
Flashing Green	Normal Operation	4
Flashing Red	Stopped	5
Double Flashing Green	Paused	6
Flashing Amber	Paused	7
Alternately Flashing Green and Red	Needs Service	8
Flashing Red, Red and Green	Needs Service	9

Status Light Error Resolutions

1. The printer is not receiving power.

- Have you turned on the printer power?
- Check power connections from the wall outlet to the power supply, and from the power supply to the printer.
- Disconnect the printer from the wall outlet for 30 seconds and then reconnect the printer to the wall outlet.

2. The printer is on and in an idle state.

No action necessary.

3. The printer has failed its power on self test (POST).

- If this error occurs right after you turn on the printer, contact an authorized reseller for assistance. When the printer is operating normally, the printer status light will be amber for about 10 seconds before turning green (solid or blinking).

There is a memory error.

- If this error occurs after you have been printing, turn the printer power off and on, and then resume printing.

The printhead needs to cool down.

- If this error continues, turn the printer power off for five minutes or more, and then turn on. If the amber light persists, then the printer requires service.

4. The printer is receiving data.

- As soon as all of the data has been received, the status LED will turn green and the printer will automatically resume operation.

5. The media is out.

- Follow the instructions for Loading Media in users manual, and then press the Feed button to resume printing.

The ribbon is out.

- The printer has sensed the end of the ribbon roll. Replace the ribbon.

The printhead is open.

- Close the top cover and then press the Feed button to resume printing.

6. The printer is paused.

- Press the Feed button to resume printing.

7. The printhead is over temperature.

- Printing will stop until the printhead cools to an acceptable printing temperature. When it does, the printer will automatically resume operation.

8. FLASH memory is not programmed.

- Return the printer to an authorized reseller.

9. The printhead or motor has had a critical failure.

- Return the printer to an authorized reseller.

Print Quality Problems

No print on the label.

- The media may not be direct thermal media when printing without ribbon (i.e. thermal transfer). See [Determining Thermal Media Types on page 24](#).
- For thermal transfer printers, the media may not be outside wound or approved for use in the printer. See the following ribbon test procedures: [Ribbon Test with Adhesive on page 27](#) and the [Ribbon Scratch Test on page 28](#) in the users manual.
- Is the media loaded correctly? Follow the instructions for *Loading Roll Media* in the users manual. For printing using transfer ribbon, see *Loading Transfer Ribbon* in the users manual.

The printed image does not look right.

- The printhead is dirty. Clean the printhead.
- The printhead is under temperature.
- Adjust the print darkness and/or print speed.
 - Use the **^PR** (speed) and **~SD** (darkness) commands referenced in the ZPL Programming Guide.
 - Use the **D** (darkness/density) and **S** (speed) commands in the *EPL Programmer's Guide*.
 - Manually adjust print darkness with the six-flash sequence of [Feed Button Modes on page 33](#).
 - The Windows printer driver or application software may change these settings and may require a change to optimize print quality.
- The media being used is incompatible with the printer. Be sure to use the recommended media for your application, and always use Zebra-approved labels and tags.
- **GX Printer Models:** Verify that the printer power supply in use is rated at 100 Watts of DC output.
- The printhead has worn out. The printhead is a consumable item and will wear out due to friction between the media and printhead. Using unapproved media may shorten life or damage your printhead. Replace the printhead.
- The platen may need cleaning or replacement. The platen (driver) roller maybe losing traction due to:
 - Foreign objects attached to its surface,
 - The rubbery smooth surface has become polished and slippery, or
 - There is damage to the normally smooth and flat print surface such as box knife cuts.

There are long tracks of missing print (blank vertical lines) on several labels.

- The printhead is dirty. Clean the printhead.
- The printhead elements are damaged. Replace the printhead.

The printing does not start at the top of the label or misprinting of one to three labels.

- The media may not be threaded correctly. Follow the instructions for *Loading Roll Media* in the users manual.
- The printer needs to be calibrated. Refer to the two-flash sequence of [Feed Button Modes on page 33](#) in this section.
- ZPL Label Formats - The correct media sensor may not be activated. Manual calibration selects the media sensing method for the labels being used (refer to the **^MN** command in the *ZPL Programming Guide*).
- ZPL Label Formats - Verify that the Label Top (**^LT**) command is correctly set for your application (consult the *ZPL Programming Guide*).
- EPL Label Formats - The correct media sensor may not be activated for label dispensing, blackline or notch sensing, or for Gap/Web sensing. Manual calibration selects the media sensing method for the labels being used (refer to the **O** and **Q** commands in the *EPL Programmer's Guide*).
- EPL Label Formats - Verify that the Set Label Length (**Q**) command is correctly set for your application (consult the *EPL Programmer's Guide*).

A ZPL label format was sent to, but not recognized by, the printer.

- Is the printer in pause mode? If so, press the Feed button.
- If the status LED is on or flashing, refer to [What the Status Light is Telling You on page 16](#).
- Make sure the data cable is correctly installed.
- A communications problem has occurred. First, make sure that the correct communications port on the computer is selected. Refer to *Communicating with the Printer* in the users manual.
- Verify the correct Format and Control Prefix on the printer match what you are using in your ZPL programmed label format. The default Format (COMMAND CHAR) is Caret (^) character and the Control (CONTROL CHAR) is a Tilde (~) character. Verify the characters with the Configuration Status label printout. Refer to the one-flash sequence of [Feed Button Modes on page 33](#) to print this label.

A EPL label format was sent to, but not recognized by, the printer.

- Is the printer in pause mode? If so, press the Feed button.
- If the printer has label dispensing enabled, the printer may be waiting for the label to be removed. The liner/web must be properly threaded through the label dispenser mechanism (peeler) to correctly operate in label dispense mode, refer to the *Label Dispenser Option* in the users manual.
- If the status LED is on or flashing, refer to *What the Status Light is Telling You* on page 16.
- Make sure the data cable is correctly installed.
- A communications problem has occurred. First, make sure that the correct communications port (USB) on the computer is selected. Refer to *Communicating with the Printer* in the users manual.

Determining Printer Configuration

The printer uses a ZPL printer configuration status label to report the printer's configuration status for both EPL and ZPL operations. The ZPL style label provides a more intuitive and functionally descriptive naming conventions than the EPL style printer status label.

Operational status (darkness, speed, media type, etc.), installed printer options (network, interface settings, cutter, etc.) and printer description information (serial number, model name, firmware version, etc.) are all included on the status label.

To get an EPL style printer configuration status label, send the printer the EPL **U** command. See the EPL programmer's guide for more information on the various EPL **U** commands and interpreting the settings displayed on these labels.

The printer configuration status label can be localized for up to 16 languages. Use the ZPL programming command **^KD** to modify the displayed language for most status items on this label.

See [Printing a Configuration Label on page 30](#) and [Feed Button Modes on page 33](#) for information on accessing the printer configuration status label.

Thermal Printing



Caution • The printhead becomes hot while printing. To protect from damaging the printhead and risk of personal injury, avoid touching the printhead. Only use the cleaning pen to perform printhead maintenance.



Caution • The discharge of electrostatic energy that accumulates on the surface of the human body or other surfaces can damage or destroy the printhead or electronic components used in this device. You must observe static-safe procedures when working with the printhead or the electronic components under the top cover.

Modes of Printing

You can operate this printer in many different modes and media configurations:

- Direct thermal printing (which uses heat sensitive media to print).
- Thermal transfer printing (which uses ribbon to heat transfer print to the media).
- Standard Tear-Off mode allows you to tear off each label (or batch print a strip of labels) after it is printed.
- Label Dispense Mode: If an optional dispenser is installed, the backing material can be peeled away from the label as it is printed. After this label is removed, the next one is printed.
- Media Cutting: If an optional media cutter is installed, the printer can cut the label liner between labels, receipt paper or tag stock depending upon the cutter option purchased.
- Stand-alone: The printer can run in a stand-alone mode (not connected to a computer) using the printer's auto running label form feature (programming based) or by using an data input device. This mode accommodates data input devices, such as scanners, weigh scales, Zebra KDU Plus or KDU (Keyboard Display Unit) with a KDU Adapter, etc., via the printer's serial port.
- Shared network printing: Printers configured with the Ethernet interface option include an internal print server with ZebraLink printer configuration web page and ZebraNet Bridge software for managing and monitoring status of Zebra printers on a network.

Print Media Types



Important • Zebra strongly recommends the use of Zebra-brand supplies for continuous high-quality printing. A wide range of paper, polypropylene, polyester, and vinyl stock has been specifically engineered to enhance the printing capabilities of the printer and to prevent premature printhead wear. To purchase supplies, go to <http://www.zebra.com/howtobuy>.

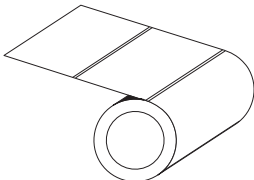
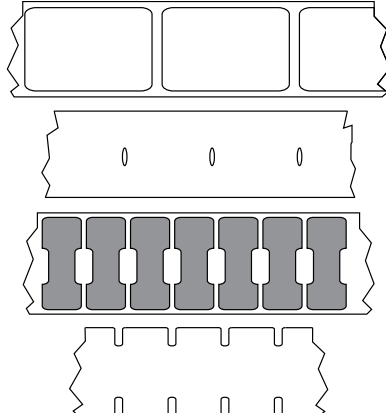

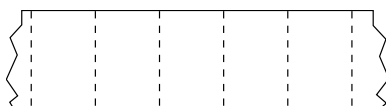
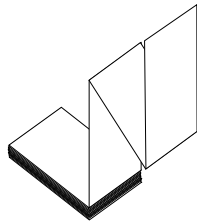
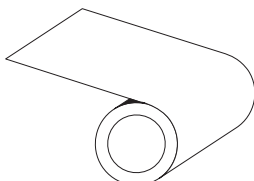
Your printer can use various types of media:

- *Standard media*—Most standard (non-continuous) media uses an adhesive backing that sticks individual labels or a continuous length of labels to a liner.
- *Continuous roll media*—Most continuous roll media is direct thermal media (similar to FAX paper) and is used for receipt or ticket style printing.
- *Linerless media*—Linerless labels have an adhesive backing, but they are wound onto a core without a liner. The media typically is perforated and may have black marks on the bottom surface of the media to indicate label separations. The top surface of linerless media labels have a special coating that keeps the labels from sticking to each other. The printer must be equipped with a special Linerless option to be able to use linerless media to keep the media from sticking to the printer.
- *Tag stock*—Tags are usually made from a heavy paper (up to 0.0075in./0.19mm thick). Tag stock does not have adhesive or a liner, and it is typically perforated between tags.

For more information on basic media types, see [Table 1](#).

The printer typically uses roll media, but you can use fan-fold or other continuous media too. Use the correct media for the type of printing you require. When printing without a ribbon, you must use direct thermal media. When using ribbon, you must use thermal transfer media.

Table 1 • Types of Media Roll and Fanfold Media

Media Type	How It Looks	Description
Non-Continuous Roll Media		<p>Roll media is wound on a core that can be 1 in. to 3 in. (25 to 76 mm) in diameter. Labels have adhesive backing that sticks them to a liner, and they are separated by gaps, holes, notches, or black marks. Tags are separated by perforations. Individual labels are separated by one or more of the following methods:</p> <ul style="list-style-type: none"> <i>Web media</i> separates labels by gaps, holes, or notches.  <ul style="list-style-type: none"> <i>Black mark media</i> uses pre-printed black marks on the back side of the media to indicate label separations.  <ul style="list-style-type: none"> <i>Perforated media</i> has perforations that allow the labels or tags to be separated from each other easily. The media may also have black marks or other separations between labels or tags. 
Non-Continuous Fanfold Media		<p>Fanfold media is folded in a zigzag pattern. Fanfold media can have the same label separations as non-continuous roll media. The separations would fall on or near the folds.</p>
Continuous Roll Media		<p>Continuous roll media does not have gaps, holes, notches, or black marks to indicate label separations. This allows the image to be printed anywhere on the label. Sometimes a cutter is used to cut apart individual labels. With continuous media, use the transmissive (gap) sensor so the printer can detect when the media runs out.</p>

Determining Thermal Media Types

Thermal transfer media requires ribbon for printing while direct thermal media does not. To determine if ribbon must be used with a particular media, perform a media scratch test.

To perform a media scratch test, complete these steps:

1. Scratch the print surface of the media with a finger nail or pen cap. Press firmly and quickly while dragging it across the media surface. Direct thermal media is chemically treated to print (expose) when heat is applied. This test method uses friction heat to expose the media.
2. Did a black mark appear on the media?

If a black mark...	Then the media is...
Does not appear on the media	Thermal transfer. A ribbon is required.
Appears on the media	Direct thermal. No ribbon is required.

Replacing Supplies

If labels or ribbon run out while printing, leave the printer power on while reloading (data loss results if you turn off the printer). After you load a new label or ribbon roll, press the Feed button to restart.

Always use high quality, approved labels, tags and ribbons. If adhesive backed labels are used that don't lay flat on the backing liner, the exposed edges may stick to the label guides and rollers inside the printer, causing the label to peel off from the liner and jam the printer. Permanent damage to the printhead may result if a non-approved ribbon is used as it may be wound incorrectly for the printer or contain chemicals corrosive to the printhead.

Adding a New Transfer Ribbon

If ribbon runs out in the middle of a print job, the indicator lights red and the printer waits for you to add a fresh roll.

1. Keep the power on as you change ribbon.
2. Open the top cover, then cut the used ribbon so you can remove the cores.
3. Load a new ribbon roll and empty ribbon core. If necessary, review the Ribbon Loading steps. *Note: Do Not Use ribbon cores with damaged notches. The notches should have square corners.*
4. Close the top cover.
5. Press the Feed button to restart printing.

Replacing a Partially Used Transfer Ribbon

To remove used transfer ribbon, perform the following steps.

1. Cut the ribbon from the take-up roll.
2. Remove the take-up roll and discard used ribbon.
3. Remove the supply roll and tape the end of any fresh ribbon to prevent it from unwrapping. When reinstalling a partially used supply roll, tape the cut end onto the empty take-up roll.

Adjusting the Print Width

Print width must be set when:

- You are using the printer for the first time.
- There is a change in media width.

Print width may be set by:

- The Windows printer driver or application software such as Zebra Designer.
- The five-flash sequence in [Feed Button Modes on page 33](#).
- Controlling printer operations with ZPL programming; refer to the Print Width (^PW) command (consult your *ZPL Programming Guide*).
- Controlling printer operations with EPL Page Mode programming, refer to the Set Label Width (q) command (consult your *EPL Programmer's Guide*).

Adjusting the Print Quality

Print quality is influenced by the heat or density (setting) of the printhead, the print speed, and the type of media you are using. Only by experimenting will you find the optimal mix for your application.



Note • Media manufactures may have specific recommendations for speed settings for your printer and the media. Some media types have lower maximum speeds than your printer's maximum speed.

The relative darkness (or density) setting can be controlled by:

- The six-flash sequence in [Feed Button Modes on page 33](#). This will overwrite any ZPL and EPL programmed darkness/density settings.
- The Set Darkness (~SD) ZPL command (consult your *ZPL Programming Guide*).
- The Density (D) EPL command (consult your *EPL Programmer's Guide*).

If you find that the print speed needs to be adjusted, use:

- The Windows printer driver or application software such as Zebra Designer.
- The Print Rate (^PR) command (consult your *ZPL Programming Guide*).
- The Speed Select (S) command (consult your *EPL Programmer's Guide*).

Media Sensing

The G-Series printer has automatic media sensing capability. The printer is designed to continuously check and adjust media length sensing for minor variations. Once the printer is printing or feeding media, the printer continually checks and adjusts the media sensing to accommodate for minor changes in media parameters from label to label on a roll and from roll to roll of media. The printer will automatically initiate a media length calibration if the expected media length or the label to label gap distance has exceeded the acceptable variation range when starting a print job or Feeding media. The automatic media sensing in the G-Series printers works the same for printer operations that use EPL and ZPL label formats and programming.

If the printer does not detect labels or blacklines (or notches with blackline sensing) after feeding the media the default maximum label length distance of 39 inches (1 meter), then the printer will switch to continuous (receipt) media mode. The printer will keep these settings until changed by software, programming or a manual calibration with different media.

Optionally, the printer can be set to do a short media calibration after printer power up or when closing the printer with power on. The printer will then feed up to three labels while calibrating.

The printer's media settings can be verified by printing a Printer Configuration label. See the [Manual Calibration on page 29](#) for more details.

The maximum distance that the automatic media type detection and sensing will check can be reduced by using the ZPL Maximum Label Length command (^**ML**). It is recommended that this distance be set to no less than two times the longest label being printed. If the largest label being printed was a 4 by 6 inch label, then the maximum label (media) length detection distance can be reduced from the default distance of 39 inches down to 12 inches.

If the printer has difficulty automatically detecting the media type and auto-calibrating, see [Manual Calibration on page 29](#) to perform an extensive calibration. It includes a printed graph of sensor operation for your media. This method disables the printer's automatic media sensing capability until the printer's default parameters are reset to the factory defaults with the four flash Feed button mode. See the [Feed Button Modes on page 33](#) for more details.

The automatic media calibration can be modified, turned on or turned off to meet your needs. Sometimes print job conditions require that the printer use all the media on a roll. The two automatic media conditions, power up with media loaded and closing the printer with power on, can be controlled individually with the ZPL Media Feed command, ^**MF**. The feed action discussed in the ZPL programmers guide for the ^**MF** command is primarily for automatic media sensing and calibration. The automatic media calibration that controls the dynamic media (label to label) calibration is the ^**XS** command. If multiple media types of different lengths, material or detection methods (web/gap, blackline or continuous) are used, you should not change these settings.

The media calibration and detection process can also be refined to match the media type loaded into the printer. Use the ZPL Media Tracking command (^**MN**) to set the media type. Sometimes the printer can detect preprinted media as the gap between labels or the liner backing with print as a blackline marks. If the ^**MN** parameter for continuous media is set, then the print does not perform the automatic calibration. The ^**MN** command also includes an automatic calibration parameter (^**MNA**) to return the printer to its default setting to automatically detect all media types.

Ribbon Overview

Ribbon is a thin film that is coated on one side with wax, resin, or wax resin, which is transferred to the media during the thermal transfer process. The media determines whether you need to use ribbon and how wide the ribbon must be. When ribbon is used, it must be as wide as or wider than the media being used. If the ribbon is narrower than the media, areas of the printhead are unprotected and subject to premature wear.

When to Use Ribbon

Thermal transfer media requires ribbon for printing while direct thermal media does not. Direct thermal media should never be used with ribbon. Bar codes and graphics can get distorted. To determine if ribbon must be used with a particular media, perform a media scratch test.

Coated Side of Ribbon

Ribbon can be wound with the coated side on the inside or outside. This printer can only use ribbon that is coated on the outside. If you are unsure which side of a particular roll of ribbon is coated, perform an adhesive test or a ribbon scratch test to determine which side is coated.



To determine which side of a ribbon is coated, complete these steps:

Ribbon Test with Adhesive

If you have labels available, perform the adhesive test to determine which side of a ribbon is coated. This method works well for ribbon that is already installed.

To perform an adhesive test, complete these steps:

1. Peel a label from its liner.
2. Press a corner of the sticky side of the label to the outer surface of the roll of ribbon.
3. Peel the label off of the ribbon.

4. Observe the results. Did flakes or particles of ink from the ribbon adhere to the label?

If ink from the ribbon...	Then...
Adhered to the label	The ribbon is coated on the outside and can be used with the printer.
Did not adhere to the label	The ribbon is coated on the inside and can not be used in the printer.

Ribbon Scratch Test

Perform the ribbon scratch test when labels are unavailable.

To perform a ribbon scratch test, complete these steps:

1. Unroll a short length of ribbon.
2. Place the unrolled section of ribbon on a piece of paper with the outer surface of the ribbon in contact with the paper.
3. Scratch the inner surface of the unrolled ribbon with your fingernail.
4. Lift the ribbon from the paper.
5. Observe the results. Did the ribbon leave a mark on the paper?

If the ribbon...	Then...
Left a mark on the paper	The ribbon is coated on the outside and can be used with the printer.
Did not leave a mark on the paper	The ribbon is coated on the inside and can not be used in the printer.

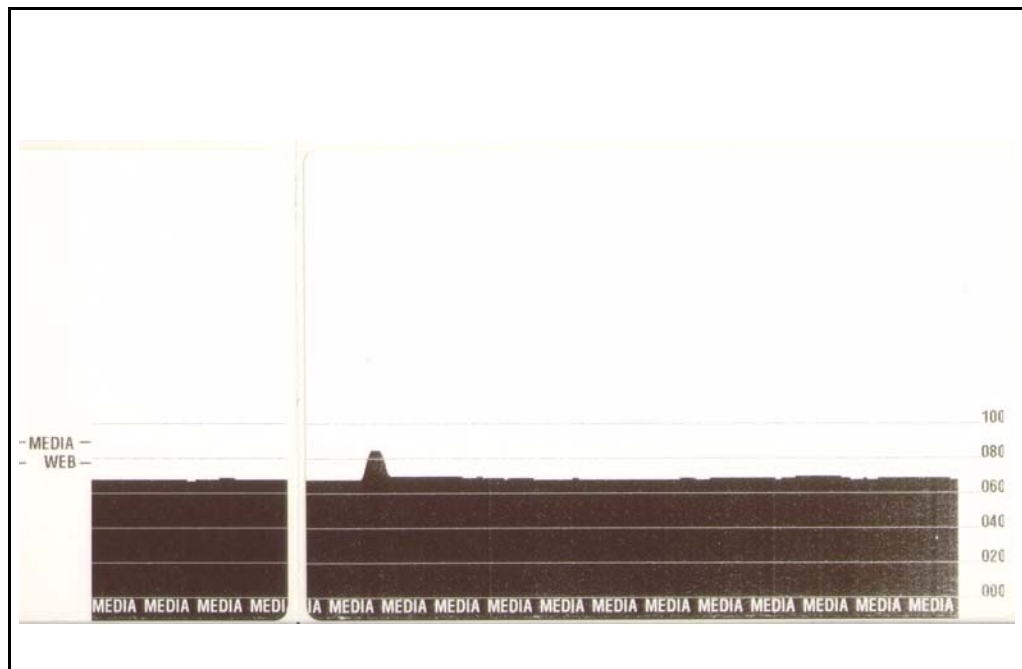
Manual Calibration

Manual calibration is recommended whenever you are using pre-printed media or if the printer will not correctly auto calibrate.

1. Make sure media is loaded.
2. Turn on the printer power.
3. Press and hold the Feed button until the green status light flashes once, then twice and then continuing until the flash groups reach the group of seven flashes. Release the Feed button.
4. The printer will set the media sensor for the label backing being used. After it is done making this adjustment, the roll will automatically feed until a label is positioned at the printhead. A profile of the media sensor settings (similar to the example below) will print. Upon completion, the printer will save the new settings in memory and the printer is ready for normal operation.
5. Press the Feed button. One entire blank label will feed. If this does not happen, try defaulting (refer to the four-flash sequence in “Feed Button Modes” later in this chapter) and recalibrating the printer.



Note • Performing a manual calibration disables the auto calibration function. To return to auto calibration, default the printer (refer to the four-flash sequence in [Feed Button Modes](#) on page 33 in this section).



Troubleshooting Tests

Printing a Configuration Label

To print out a listing of the printer's current configuration, refer to the one-flash sequence in [Feed Button Modes on page 33](#) in this section

PRINTER CONFIGURATION	
Zebra Technologies ZTC GX420t	
15.0.....	DARKNESS
6 IPS.....	PRINT SPEED
+000.....	TEAR OFF
TEAR OFF.....	PRINT MODE
GAP/NOTCH.....	MEDIA TYPE
WEB.....	SENSOR TYPE
MANUAL.....	SENSOR SELECT
THERMAL-TRANS.....	PRINT METHOD
800.....	PRINT WIDTH
1234.....	LABEL LENGTH
39.0IN 989MM.....	MAXIMUM LENGTH
CONNECTED.....	USB COMM.
BIDIRECTIONAL.....	PARALLEL COMM.
9600.....	BAUD
8 BITS.....	DATA BITS
NONE.....	PARITY
XON/XOFF.....	HOST HANDSHAKE
NONE.....	PROTOCOL
<~> 7EH.....	CONTROL CHAR
<^> 5EH.....	COMMAND CHAR
<, > 2CH.....	DELIM. CHAR
ZPL II.....	ZPL MODE
CALIBRATION.....	MEDIA POWER UP
CALIBRATION.....	HEAD CLOSE
DEFAULT.....	BACKFEED
+000.....	LABEL TOP
+0000.....	LEFT POSITION
NO.....	HEXDUMP
034.....	WEB S.
096.....	MEDIA S.
011.....	WEB GAIN
050.....	MARK S.
013.....	MARK GAIN
095.....	MARK MED S.
015.....	MARK MEDIA GAIN
095.....	CONT MEDIA S.
007.....	CONT MEDIA GAIN
075.....	RIBBON OUT
040.....	RIBBON GAIN
000.....	TAKE LABEL
CWF.....	MODES ENABLED
.....	MODES DISABLED
832 8/MM FULL.....	RESOLUTION
V56.15.1ZP32 <-.....	FIRMWARE
V06.00.0207.....	HARDWARE ID
CUSTOMIZED.....	CONFIGURATION
2944k.....R:	RAM
1536k.....E:	ONBOARD FLASH
NONE.....	FORMAT CONVERT
77,291 IN.....	LAST CLEANED
77,291 IN.....	HEAD USAGE
77,291 IN.....	TOTAL USAGE
77,291 IN.....	RESET CNTR1
77,291 IN.....	RESET CNTR2
31A07330008.....	SERIAL NUMBER
2007-09-20 22:48:18	TIME STAMP

FIRMWARE IN THIS PRINTER IS COPYRIGHTED

Recalibration

Recalibrate the printer if it starts to display unusual symptoms, such as skipping labels. Refer to the two-flash sequence in [Feed Button Modes on page 33](#) in this section.

Resetting the Factory Default Values

Sometimes, resetting the printer to the factory defaults may solve some problems. Refer to the four-flash sequence in [Feed Button Modes on page 33](#) in this section.

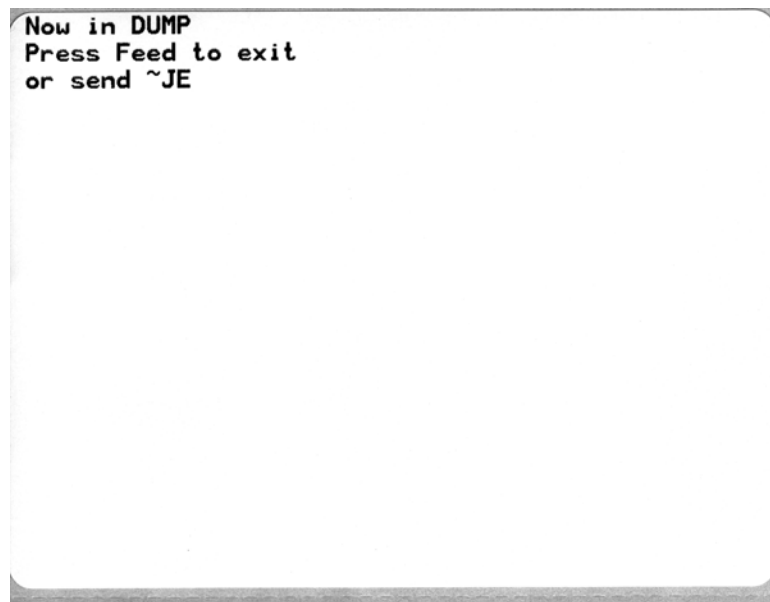
Communications Diagnostics

If there is a problem transferring data between the computer and printer, try putting the printer in the communications diagnostics mode. The printer will print the ASCII characters and their respective hexadecimal values (a sample is shown below) for any data received from the host computer. To find out how,

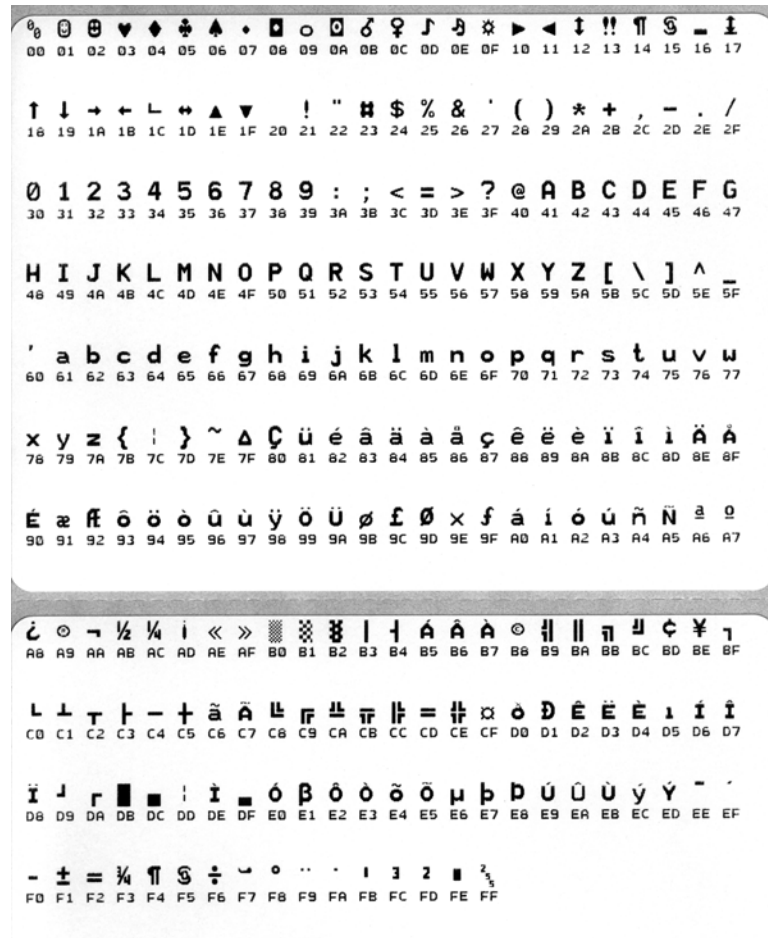
There are multiple ways to enter hex data dump mode:

- The **~JD** ZPL command
- The **dump** EPL command
- On power up with the Feed button pressed. Refer to the power off mode procedure in [Feed Button Modes on page 33](#) in this section.

The printer will print 'Now in DUMP' (see below) and advance to the top of the next label.



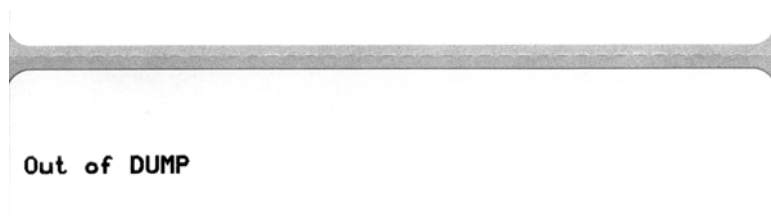
The following example of a communications DUMP mode printed out. The printout displays hexadecimal data 00h-FFh (0-255 decimal) with a unique character for each hexadecimal value displayed above the hexadecimal data.



The blank lines between the lines of data are where serial port and Bluetooth data handling errors get logged. The errors are:

- F = Frame Error
- P = Parity Error
- N = Noise Error
- O = Data Overrun Error

To exit the diagnostic mode and resume printing, turn off and then turn on the printer. An alternate method for exiting the diagnostic mode is to press the Feed button as many times as it takes to clear the printer's command buffer and print 'Out of DUMP' on the label.



Feed Button Modes

Power Off Mode (Communications Diagnostics Mode)	
With the printer power off, press and hold the Feed button while you turn on the power.	
Flash Sequence	Action
Rapid Red Flashing	<p>Firmware Download Mode - The printer starts rapidly flashing red to denote entry into the Firmware Download mode. Releasing the Feed button here will start initializing the printer for download. The printer is ready to start downloading firmware when the status light begins to slowly flash between red and green.</p> <p>See Sending Files to the Printer in the user's manual for more information on using the Firmware (and File) Download utility available for use with this printer. Firmware updates for your printer, if available, are posted on the Zebra on our web site at: www.zebra.com</p>
Amber	<p>Normal Operations Mode - The printer continues into a normal printer initialization. Releasing the Feed button here will allow the printer to start normally without firmware download or operating in communications diagnostics mode.</p>
Green	<p>Communications Diagnostic (Dump) Mode - Release the Feed button immediately after the printer status light turns green. The printer will print 'Now in DUMP' at the top of the label and then advance to the next label. After printing the first label, the printer will automatically enter into diagnostic mode in which the printer prints out a literal representation of all data subsequently received.</p> <p><i>To exit the diagnostic mode and resume printing, turn off and then turn on the printer. An alternate method for exiting the diagnostic mode is to press the Feed button as many times as it takes to clear the printer's command buffer and print 'Out of DUMP' on the label.</i></p>

Power On Modes	
With the printer power on and top cover closed, press and hold the Feed button for several seconds. The green status LED will flash a number of times in sequence. The explanation at the right (Action) shows what happens when you release the key after the start specific number of flashes and before the next flash sequence starts.	
Flash Sequence	Action
*	Configuration Status - Prints a detailed printer configuration status label. The label can be used to verify printing, assist printer to computer communication configuration, maintenance, troubleshooting, and help us with customer care communications.
* **	Standard Media Calibration - The printer detects and sets media type and media length, and it adjusts the media sensors for optimal performance with the installed media. The printer will feed one to four labels. <i>Note: Users familiar with the Zebra EPL desktop printer use this Feed mode to replace power-up AutoSensing calibration.</i>
* ** ***	Serial Port Configuration - <i>Applies only to printers with serial interface ports.</i> To reset the communication parameters. Press and release the Feed button while the LED rapidly flashes amber and green. For autobaud synchronization: Send the ^XA^XZ command sequence to the printer while the LED rapidly flashes amber and green. When the printer and host are synchronized, the LED changes to solid green. NOTE: No labels will print during autobaud synchronization.
* ** *** ****	Factory Defaults - Resets the printer to the default factory settings and modes. See the configuration label for a list of the primary settings affected by this Feed Mode option. Other settings are exclusively set, viewed and controlled by programming are also reset. The printer then performs a standard media calibration. Once the printer has entered the Factory Default mode, the status light will turn amber for three (3) seconds. During that time you may do two things: Do nothing and the printer will reset the factory defaults automatically as described above OR press and hold the feed button to enter a factory default reset modes for printers for network printer options (Ethernet, Wi-Fi or Bluetooth). Releasing the button after the first flash resets the network factory options only. Releasing the button after the second flash sequence (two flashes) will reset the printer defaults only. Releasing the button after the third flash sequence (three flashes) will reset both the printer and network settings.
* ** *** **** *****	Print Width Adjustment - Prints a succession boxes starting at the minimum print width and ending in the printer's maximum print width in 4mm increments. Press the Feed button once when the printer has reached the desired maximum print width. Note that the printer driver and applications can override this setting.
* ** *** **** ***** *****	Print Darkness (Density) Adjustment - Prints a succession of bar code simulation patterns starting at the minimum darkness (print density/heat) and ending in the printer's maximum darkness in increments of four (4) using the ZPL darkness setting range values. Press the Feed button once the pattern is clear and legible. Do not continue to increase the darkness setting. Bar code line widths may become distorted reducing readability. Note that the printer driver and applications can override this setting.
* ** *** **** ***** ***** *****	Manual Media Calibration - The printer runs extensive tests to detect and set media type and media length, and then it adjusts the media sensors for optimal performance with the installed media. Manual calibration is recommended whenever you are using pre-printed media, print on the liner or if the printer will not correctly auto calibrate. A graphical profile of the media sensing will print.

If the Feed button remains pressed after a 8-flash sequence, the printer exits the configuration mode when the Feed button is released.



Required Tools

Tools • Make use of the following tools while performing replacement procedures:

- Phillips driver #0
- Phillips driver #1
- 5.5mm nut driver
- small slot-head screwdriver
- needle-nose pliers
- WD-40 'No Mess' pen for cutter maintenance
- Printhead Cleaning Pen
- Fiber free swabs
- Lint free wipes, such as Kim-Wipes



Notes • _____



Replacing Parts

In the event you must replace a spare part, review the repair path decision tree to see which procedures to perform. Read the steps in the required procedures to remove the old part and install the new part. Other required procedures may include cleaning or other maintenance after the spare is replaced.

Repair Path for Transfer Ribbon Printers

Before performing any procedure, make sure you remove both media and ribbon from the printer.

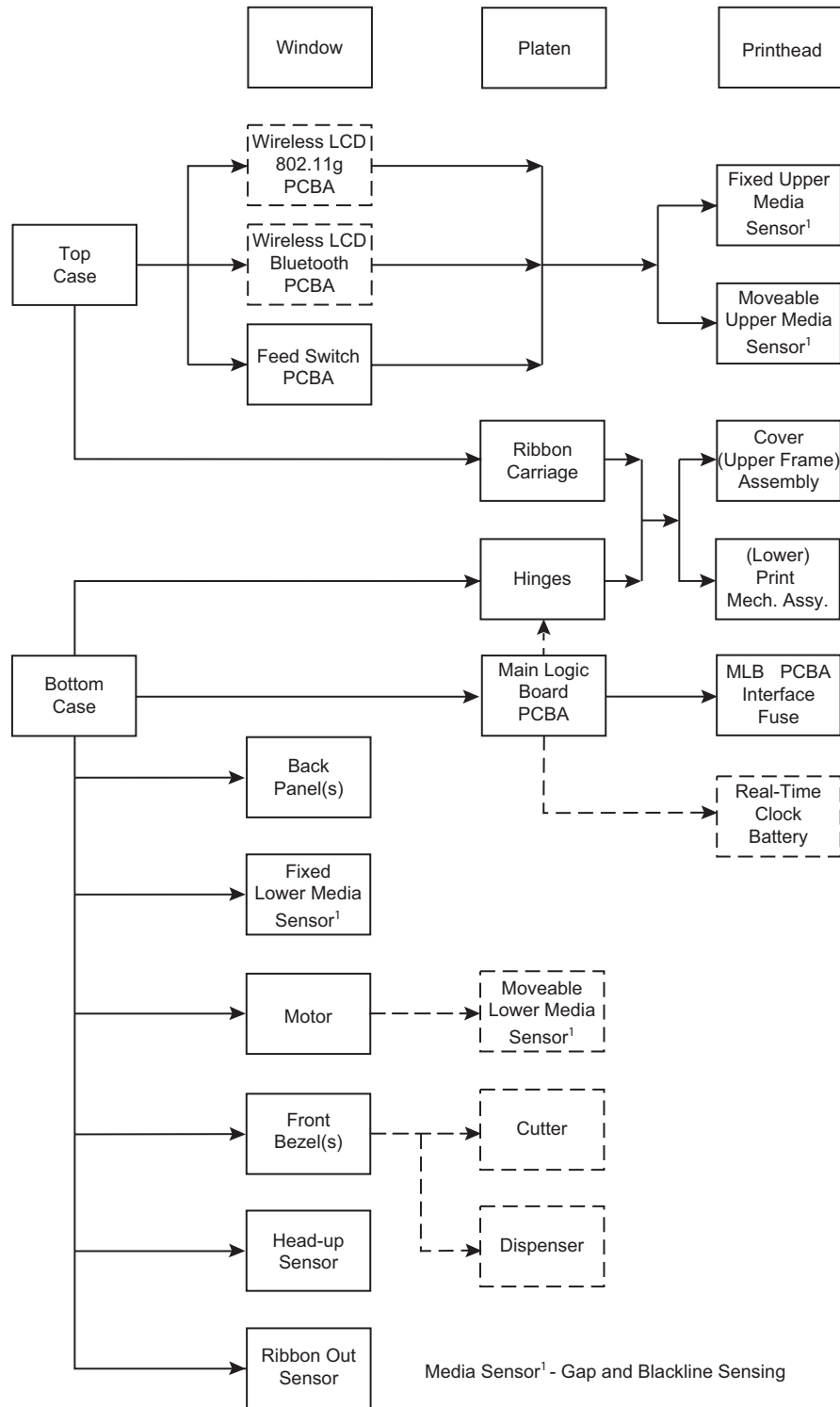


Figure 4 • Decision Tree

Replacing the Window

Removal

1. Use a #0 Phillips screwdriver to remove the window's screw.
2. Close the printer and lift the rear of the window.
3. Pull the window's tabs out of their slots.
4. Lift the window away from the printer.

Installation

1. Align the window over the top cover.
2. With the tabs to the front, insert them into the top cover.
3. Lower the rear of the window in place.
4. While holding the window, open the printer.
5. Insert the window's screw into its place.
6. Use a #1 Phillips screwdriver to tighten the screw



Replacing the Platen

Removal

Open the printer and remove any media.

1. Open the dispenser (peel) door if the dispenser option is installed.
2. Push the tabs on the right and left sides of the platen bearings out slightly to clear the lock and then rotate them up.
3. Lift the platen out of the printer's bottom frame.

Installation

1. Make sure the bearings are oriented correctly on the shaft of the platen and press the gear on the platen shaft.
2. Align the platen with the gear to the left and lower it into the printer's bottom frame.
3. Rotate the tabs back and snap them into place.



Replacing the Printhead

In the event you need to replace the printhead, read the procedure and review the removal and installation steps before actually replacing the printhead.



Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.



Caution • Turn the printer power off and unplug the power cord before replacing the printhead.



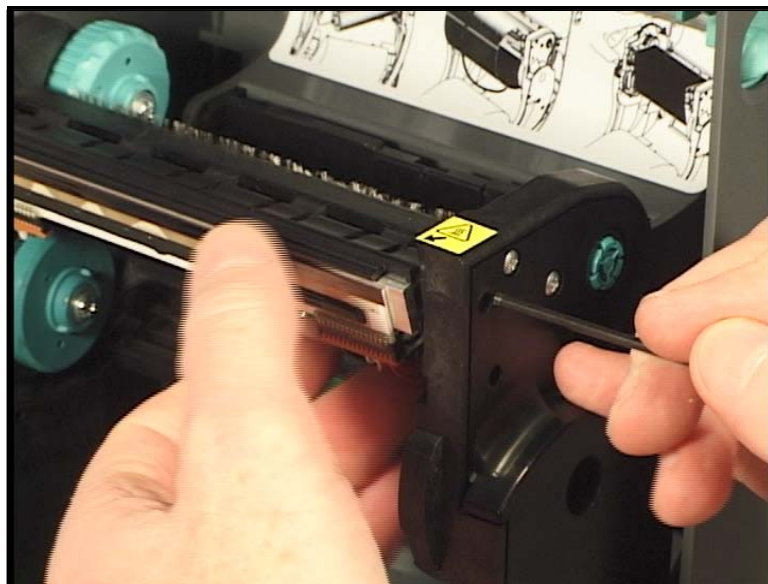
Caution • Let the printhead completely cool before attempting to remove the printhead.

Removal

1. Open the printer. Remove any transfer ribbon from the printer.
2. Use a small flat bladed screwdriver to remove the ribbon guide. Gently pry the guide right-side tab from the ribbon carriage. Pull the left side of the ribbon guide out.
3. Use a blunt tipped tool to press the release tab on the right side and then the left side of the printhead. The tool diameter can be from 0.10 to 0.15 inches (2.5 to 3.8 mm).

Insert the tool into the ribbon carriage's printhead release access (the round) opening. Push the release tab and gently pull the printhead bracket down.

4. Gently but firmly pull the two printhead cable bundles' connectors off of the printhead.
5. Gently but firmly pull the green ground wire off the printhead.



Installation

1. Push the left side printhead connector into the printhead. The connector is keyed to only insert one way.
2. Connect the green ground wire to the printhead.
3. Push the right side printhead wire connector onto the printhead.
4. Check that the ground wire and wire bundles are still connected to the printhead.
5. Insert the printhead bracket's tab into slot in the ribbon carriage assembly. Align the printhead spring slots to the five posts and snap the printhead into the ribbon carriage.
6. Place the left hand side of the ribbon guide into the ribbon carriage. Swing the right side of the ribbon guide into the slot and snap it into position.
7. Verify that the printhead moves up and down freely when pressure is applied and remains locked when released.
8. Clean the printhead. Use a new pen to wipe body oils (finger prints) and debris of the printhead. Clean from the center of the printhead to the outside.

Reload media. Plug in power, turn on the printer and print a status report to ensure proper function.

Replacing the Top Cover



Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

Removal

1. Open the printer and lean it back to gain access to the top of the media compartment.
2. Use a #1 Phillips screwdriver to remove the seven screws holding the top cover to the inner, upper frame.
3. Lift the cover off the printer. Take care to slip the sides of the top cover around the latches on the left and right sides. Close the printer

Installation

1. Lower the top cover onto the inner, upper frame.
2. Open the printer and make sure to align the latches in their access holes.
3. Put the latch springs in their slots.
4. Replace the seven screws that hold the top cover.



Replacing the Feed Switch Circuit Board



Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

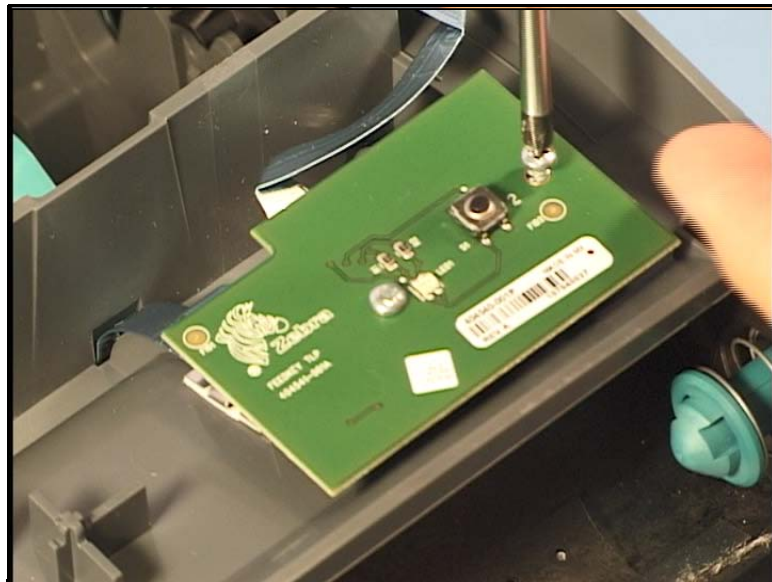
You must remove the top cover before performing this procedure.

Removal

1. Use a #1 Phillips screwdriver to remove the two screws securing the circuit board to the top, inner frame.
2. Lift the front of the board up to access the ribbon cable connectors.
3. Open the connector to the media sensor and pull the ribbon cable out.
4. Open the connector to the Main Logic circuit board and pull the ribbon cable out.

Installation

1. Make sure the ribbon sensor cable is secured into its clip.
2. Align the feed button board with the ribbon connectors to the rear.
3. Plug the media sensor cable into its connector and lock it into place.
4. Plug the flex cable going to the Main Logic circuit board (right side) into its connector on the feed switch circuit board and lock it into place.
5. Lower the feed button board onto the top, inner frame. Replace the screws that hold the board and use a #1 Phillips screwdriver to tighten them.



Replace the top cover. Reload media. Plug in power, turn on the printer and print a status report to ensure proper function.

Replacing the LCD/Feed Switch Circuit Board



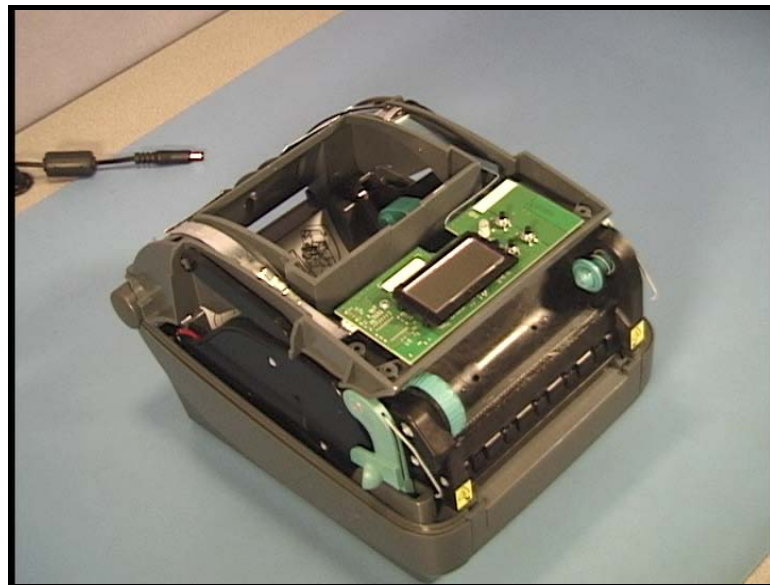
Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

This procedure applies to both Wi-Fi 802.11 b/g and Bluetooth printer configurations.

You must remove the top cover before performing this procedure.

Removal

1. Use a #1 Phillips screwdriver to remove the two screws securing the LCD/Feed Switch circuit board to the top of the printer chassis.
2. Release the locks on the three ribbon cables and pull the cables free of the circuit board.
3. **For Wi-Fi 802.11 b/g printer models:** Disconnect the antenna from the circuit board.



Installation

1. Open the three cable connector's cable locks. Insert the flex cables into the connectors with the cables contacts (fingers) facing the LCD PCBA. Lock the connectors.
2. **For Wi-Fi 802.11 b/g printer models:** Connect the antenna from the circuit board.
3. Verify all ribbon cables are inserted straight in the connectors and are not pulled out.
4. Flip the circuit board over and mount to the printer chassis. Secure it with the two screws.

Replace the top cover. Reload media. Plug in power, turn on the printer and print a status report to ensure proper function.

Replacing the Upper Media Sensor



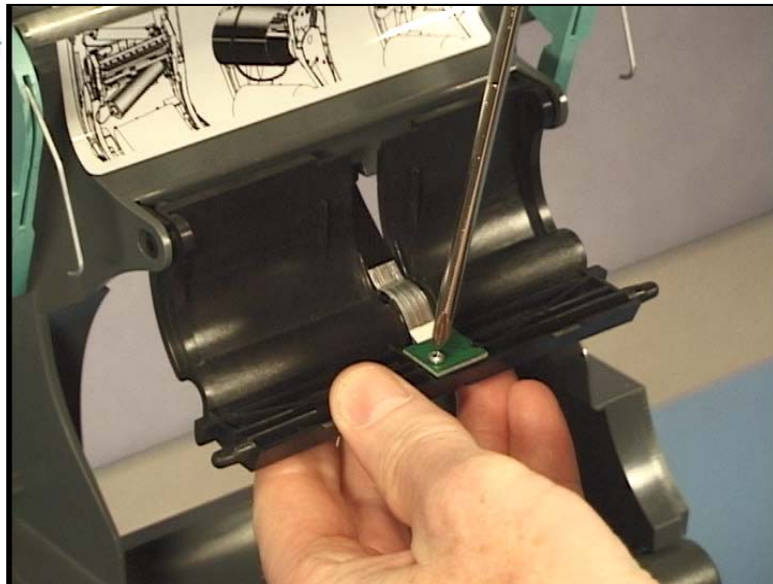
Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

This procedure applies to both standard (fixed position) and moveable gap/blackline sensor configurations.

You must remove the top cover and feed switch circuit board before performing this procedure.

Removal

1. Detach the links from both the left and right sides of the top, inner frame.
2. Lift top inner frame away from the ribbon carriage. The flapper (the curved scoop) will swing free of the ribbon carriage.
3. Remove the curved cover from the flapper (curved scoop) to expose the sensor's cable.
4. Use a #0 Phillips screwdriver to detach the sensors's circuit board.
5. Pull the end of the sensor's cable free of the clip holding it under the feed switch. Pull the sensor and its cable free of the upper chassis and out of the printer.



Installation

1. Using the old sensor as template, duplicate the fold on the end of the cable.
2. Insert the sensor's cable through the slot in the flapper and attach the sensor circuit board to flapper with the sensor facing down into the flapper.
3. Align the cable flat in the channel and snap the curved cover over the sensors cable.
4. Lift the top frame and swing the flapper to align with the two curved slots in the ribbon carriage. Lower the top cover to insert the flapper.
5. Reattach the right and left ribbon carriage links to the cross shaped extrusions the sides of the top inner frame.
6. Insert the folded end of the sensor cable through hole on the center of the top inner frame.
7. Attach the end of the cable's folded end in the clamp located in the area under the feed switch.

Replace the feed switch and top cover. Reload media. Plug in power, turn on the printer and print a status report to ensure proper function.

Replacing the Bottom Case and Back Panel



Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

Removal

1. Turn the printer over. Use a #1 Phillips screwdriver to loosen the screws holding the bottom case to the inner mechanism.
 - ☐ one screw at the front (under the media exit). *For printers with the cutter option, remove the two screws on the bottom of the cutter bezel (cover) and remove the cutter bezel to access this single screw securing the front of the bottom cover.*
 - ☐ two screws on the bottom (near the back)
 - ☐ two screws on the rear (near the hinges)
2. Lift the front of the bottom case away from the printer.
3. Remove the back panel from the bottom case. Gently release the two latches securing the back panel to the bottom case with a small flat bladed screwdriver or a fingernail.



Installation

1. From beneath, lower bottom case from the front to the rear of the printer.
2. Place the five screws back into their places and tighten with screwdriver.
3. *For printers with the cutter option, replace the cutter bezel. The cutter's mounting bracket slides inside of the lip located on top of the inside of the cutter bezel. Swing the bezel over the cutter bracket and secure it with the two screws.*
4. From the rear, align the back panel to the interface connectors and power switch and slide the two tabs into the two slot to latch it into place. Snap the top edge of the back panel inside the bottom case. The back panel should now be flush to the rear of the bottom case.

Replacing the Main Logic Board Circuit Board



Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

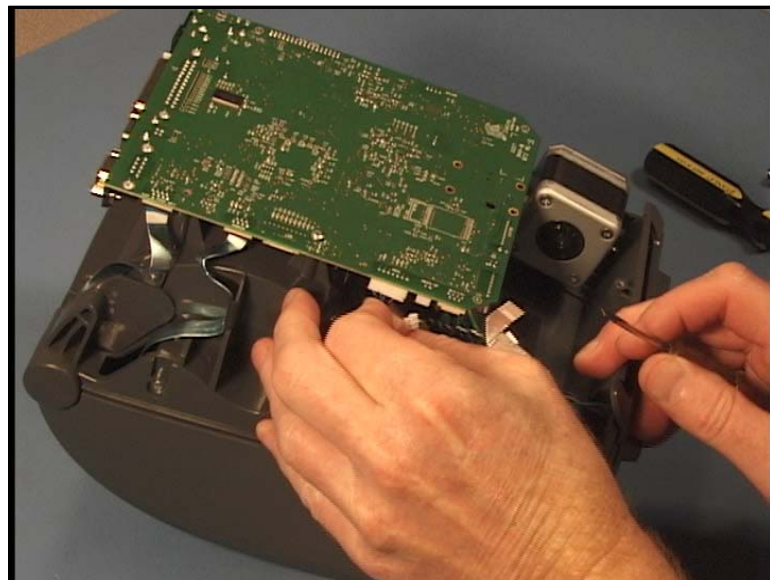
You must remove the bottom case before performing this procedure.

Removal

1. From beneath, use a #1 Phillips screwdriver to remove the screw holding the Main Logic circuit board to the inner mechanism.
2. Carefully lift the Main Logic circuit board away from the printer to disconnect the wires, bundles and ribbon cables from one side of the printer and then the other. Flex circuit cable connectors include a colored locking tab. Pull the tab up to unlock the connector.

Installation

1. From beneath, check the wires, bundles and ribbon cables.
2. Align the Main Logic circuit board over the mounting pins on the inner mechanism.
3. Connect the printer's motor, sensors, printhead and ground cable to the Main Logic circuit board. With the locking tab pulled up (open), slide the flex circuit cables into the connector. Push the tab down to lock the cable. Check that all are securely attached.
4. Lower the Main Logic circuit board onto the mounting pins.
5. Place the screw back into place and use a #1 Phillips screwdriver to tighten it.



Replace the bottom case. Reload media. Plug in power, turn on the printer and print a status report to ensure proper function.

Replacing the Battery



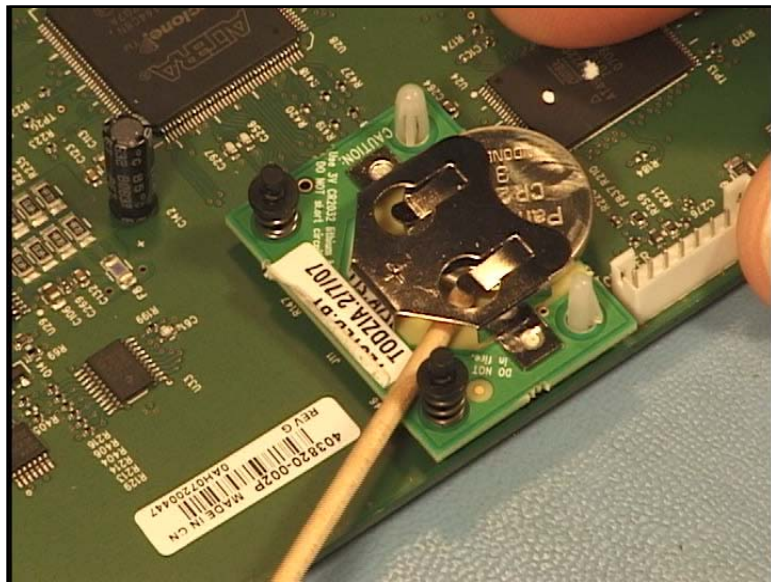
Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

The real-time clock option has a replaceable battery. Be familiar with the safety and hazardous waste disposal requirements of your local community.

You must remove the bottom case and Main Logic circuit board before performing this procedure.

Removal

1. Locate the real-time clock option on the top of the Main Logic circuit board (near the front).
2. Use a tipped non-conductive blunt tool (such as the shaft of a cotton swab) to press the battery out of its cradle.



Installation

Check the alignment of the battery! Positive is up! Note the plus symbol (+).

1. Insert the battery into its cradle on the real-time clock board.

Replace the Main Logic circuit board and bottom case. Reload media. Plug in power, turn on the printer and print a status report to ensure proper function.

Replacing the Fuse



Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

You must remove the bottom case and Main Logic circuit board before performing this procedure.

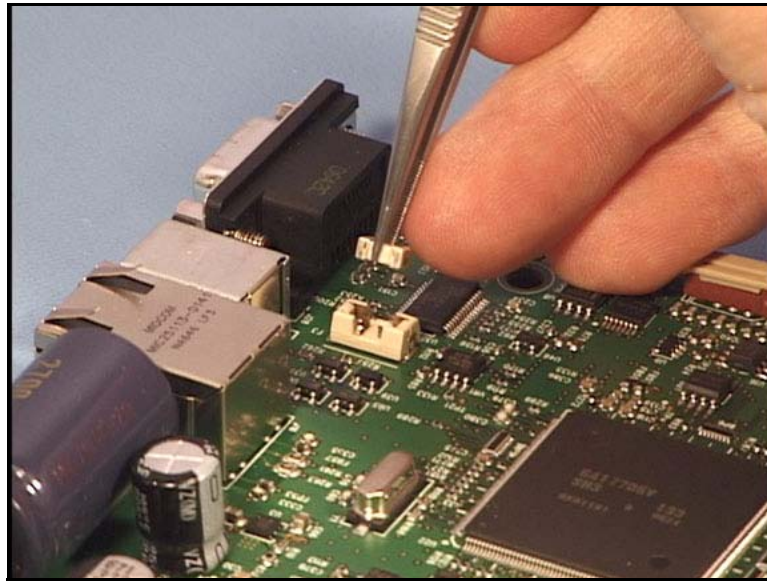
Removal

1. Locate the fuse on the top of the Main Logic circuit board near the interface connectors.
2. Use tweezers to grasp the fuse and pull it from its socket.

Installation

There is no concern about polarity.

1. Lower the fuse into its socket.
2. Make sure it is seated completely.



Replace the Main Logic circuit board and bottom case. Reload media. Plug in power, turn on the printer and print a status report to ensure proper function.

Replacing the Head Up Sensor



Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

You must remove the bottom case before performing this procedure.

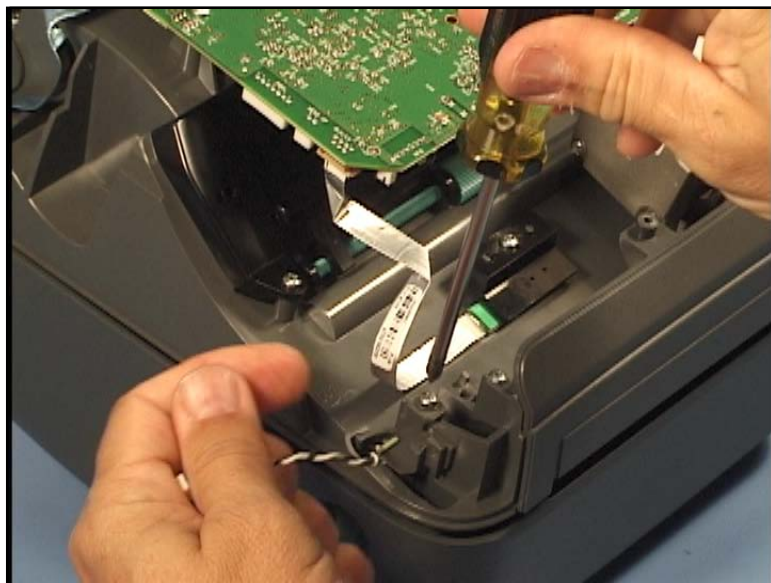
Removal

From beneath, the head up sensor is located on the left side of the printer towards the front of the media compartment.

1. Carefully pull the sensor's connector off of the Main Logic circuit board.
2. Use a #1 Phillips screwdriver to loosen the screw holding the head up sensor and bracket to the inner mechanism.
3. Carefully lift the sensor and its wire bundle away from the printer.

Installation

1. Align the sensor into place with the guide facing forward.
2. Lower the sensor and its bracket into place.
3. Place the screw back into place and use a #1 Phillips screwdriver to tighten it.
4. Plug the wire bundle into its connector on the Main Logic circuit board.



Replace the bottom case. Reload media. Plug in power, turn on the printer and print a status report to ensure proper function.

Replacing the Lower Fixed Gap/Blackline Sensor



Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

You must remove the bottom case before performing this procedure.

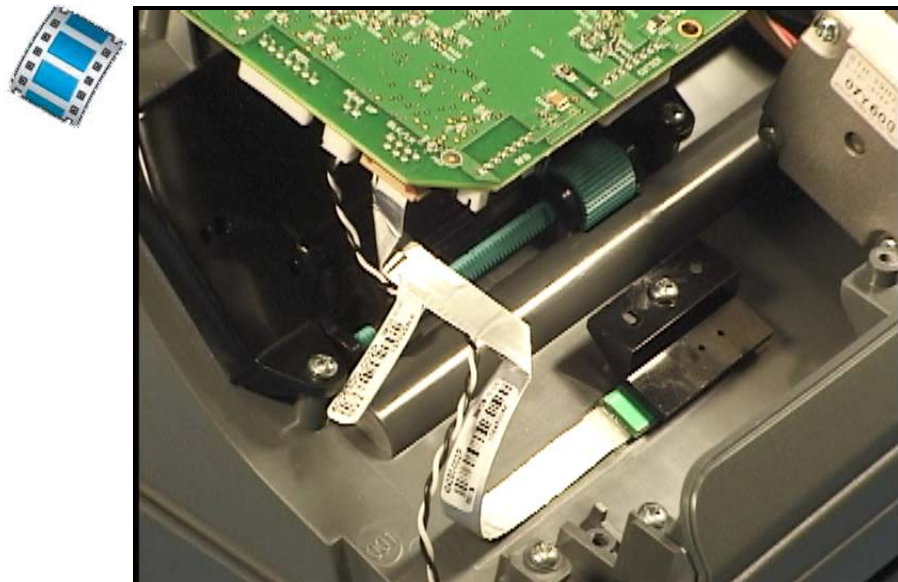
Removal

The black line (bottom gap) sensor is located at the center of the printer towards the front of the media compartment.

1. From beneath, open the connector on the Main Logic circuit board and pull out the ribbon cable from the sensor.
2. Use a #1 Phillips screwdriver to remove the screw that holds the sensor and its bracket to the bottom, inner frame.
3. Carefully lift the sensor and its ribbon cable away from the printer.

Installation

1. Make sure the sensor is mounted on its bracket.
2. From beneath, align the sensor into place with its ribbon cable to the left and the screw mounting hole to the rear.
3. Replace the screw that holds the sensor and use a #1 Phillips screwdriver to tighten it.



Replace the bottom case. Reload media. Plug in power, turn on the printer and print a status report to ensure proper function.

Replacing the Motor



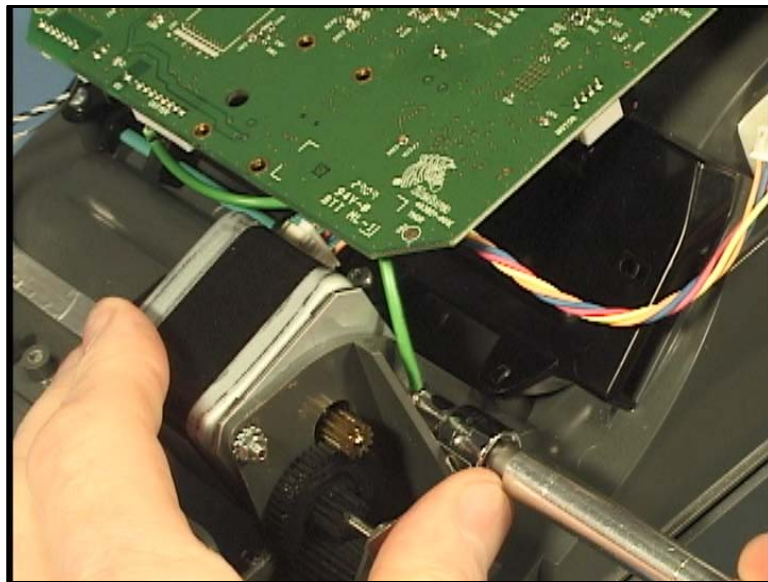
Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

You must remove the bottom case before performing this procedure.

Removal

The motor is located on the right side of the printer under the media compartment.

1. Pull the motor's wire bundle away from its connector on the Main Logic circuit board.
2. Disconnect the motor's ground wire from the Main Logic circuit board. For printers with the cutter option, disconnect this ground wire from the 'Y' connector joining the cutter and motor ground wires to connect to the Main Logic circuit board.
3. Use a M3 nut driver to remove the nuts holding the motor, two washers and ground clip to the inner chassis. Carefully pull the motor away from the chassis and out of the printer.



Installation

1. From beneath, align the motor into place making sure its gears mesh with the transfer gears and then align the motor's threaded mounting shafts to the printer chassis.
2. Put a flat washer and M3 nut on the threaded motor mounting shaft farthest away from the inside of the printer and hand tighten the nut.
3. Place a flat washer, the ground clip and then M3 nut on the other threaded motor. Rotate the ground clip to rest against the latch cover on the printer's chassis. Use a M3 nut driver to tighten both nuts securing the motor.
4. Reconnect the motor's ground wire to the Main Logic circuit board. For printers with the cutter option, reconnect this ground wire to the 'Y' connector joining the cutter and motor ground wires to connect to the Main Logic circuit board.

Replace the bottom case. Reload media. Plug in power, turn on the printer and print a status report to ensure proper function.

Replacing the Lower Moveable Gap/Blackline Sensor

The factory-installed optional moveable black line sensor allows the printer to use media with off-center blackline(s), marks or notches (holes).

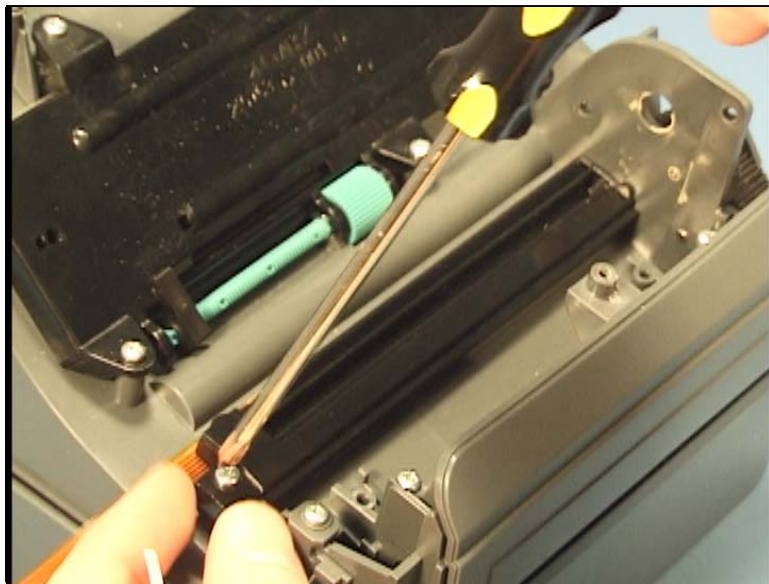


Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

You must remove the bottom case, Main Logic circuit board and motor before performing this procedure.

Removal

1. From beneath, use #1 Phillips screwdriver to loosen the screw holding the sensor's bracket track to the inner, bottom frame.
2. Carefully lift the sensor and bracket track away from and out of the side wall of the printer's chassis.



Installation

1. Place the sensor in the middle of the sensor's slide which is track molded into the printer's chassis.
2. Align the bracket track so that its two slide tracks align up with the two metal springs on the back of the sensor. Slide the bracket track's capture and alignment pins into the printer's chassis wall. Align the screw mounting hole on the opposite end of the bracket track to chassis's bracket mounting post and snap it to the chassis.
3. Replace the screw that held the bracket track with a #1 Phillips screwdriver. Make sure the sensor and cable slide in its track.

Replace the motor, Main Logic circuit board and bottom case. Reload media. Plug in power, turn on the printer and print a status report to ensure proper function.

Replacing the Ribbon Out Sensor

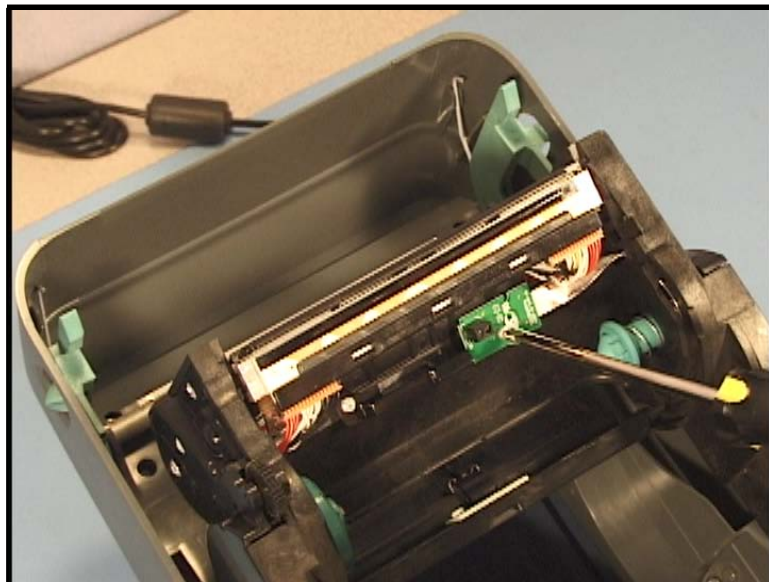


Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

You must remove the bottom case before performing this procedure.

Removal

1. Use a small flat bladed screwdriver to release the ribbon guide's right-side tab from the ribbon carriage. Pull the left side of the guide free from the ribbon carriage.
2. Use a #1 Phillips screwdriver to remove the screw securing the ribbon out sensor circuit board.
3. Remove the five screws securing the ribbon carriage's right side cover to the frame and remove the cover.
4. Remove the clip securing the sensor's flex cable to the side of the printer's chassis.
5. Release the sensor's flex cable from the Main Logic circuit board. Lift the latch to release the cable. The single screw securing the Main Logic circuit board can be removed to gain better access to the connector.
6. Slide the flex cable out of the cable clamps, lower chassis and ribbon carriage.



Installation

1. From the inside of the printer, insert the ribbon sensor's flex cable into the side of the ribbon carriage. The sensor side faces the printhead.
2. Twist the cable a quarter turn to have the sensor facing away from the frame and secure it to the ribbon carriage with the screw.
3. Slide the flex cable through the two cable clamps on the side of the ribbon carriage and through the ribbon carriage's hinge and the printer chassis into the bottom half of the printer.
4. Route the flex cable under the flex cables and connect it to the Main Logic circuit board. There should be no twists in the cable. The cables circuit side (fingers) should be facing in towards the inside of the printer. Verify the flex cable is locked.
5. Re-secure the Main Logic circuit board to the chassis with the single screw.
6. Leaving a little slack or service loop, re-attach the flex cable to the rear side to the it's nearest frame support (rib) on the chassis.
7. Replace the right side ribbon carriage cover and secure it with the five screws.

Replace the bottom case. Reload media. Plug in power, turn on the printer and print a status report to ensure proper function.

Replacing the Standard Bezel



Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

You must remove the bottom case before performing this procedure.

Removal

The bezel is located on the front of the printer below the media exit.

1. Turn the printer upside down. Use a #1 Phillips screwdriver to loosen and remove the screws on the left and right sides immediately behind the bezel.
2. Lift the bezel cover away from the printer.

Installation

1. With the printer upside down, align the bezel cover so that the mounting holes face the rear of the printer and the flat media exit faces to the top of the printer.
2. Place the bezel against the printer.
3. Replace the screws and use a #1 Phillips screwdriver to tighten them.



Replace the bottom case. Reload media. Plug in power, turn on the printer and print a status report to ensure proper function.

Replacing the Dispenser (Peel Option) Bezel



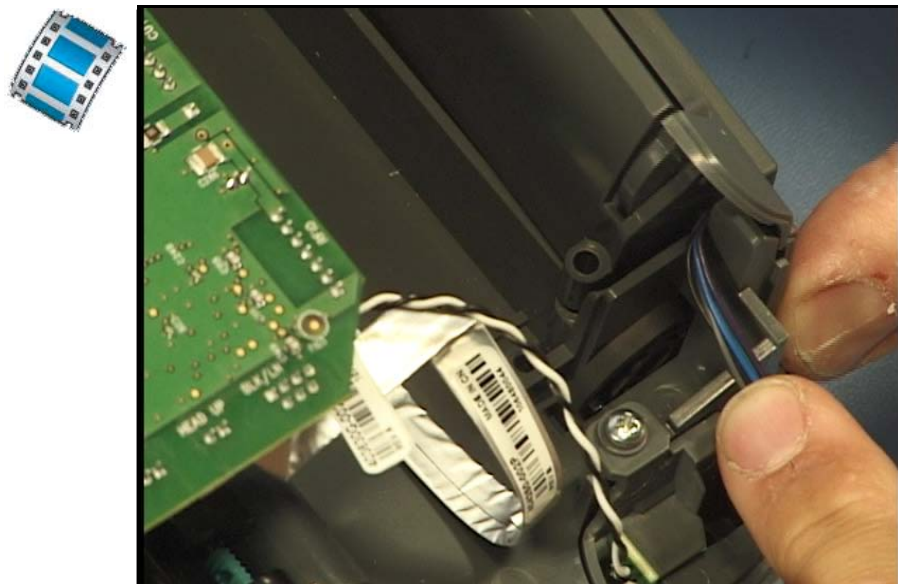
Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

You must remove the platen roller and bottom case before performing this procedure.

Removal

The dispenser is located on the front of the printer below the media exit.

1. With the printer open and upright, open the dispenser door.
2. Remove the peel-bar. Lift the left side away from bearing; then pull the right side away from the printer.
3. Close the dispenser door.
4. Turn the printer upside down.
5. Carefully pull the dispenser's connector off of the Main Logic circuit board.
6. Use a #1 Phillips screwdriver to loosen and remove the screws on the left and right sides.
7. Lift the dispenser (peel option) away from the printer.



Installation

1. With the dispenser out of the printer, make sure to close the dispenser door.
2. With the printer upside down, align the dispenser so that the mounting holes face the rear of the printer and the white roller faces to the top of the printer.
3. Place the dispenser against the printer.
4. Route the dispenser's wire bundle above the tab and to the right of the frame's wall.
5. Replace the screws and use a #1 Phillips screwdriver to tighten them.
6. Plug the wire bundle into its connector on the Main Logic circuit board.
7. Turn the printer right side up and open the dispenser door.
8. Align the peel bar so that the flat side faces up towards the top of the printer.
9. Install the peel bar. Insert the right side into the printer and rotate the left side down so that it seats securely.

Replace the bottom case. Reload media. Plug in power, turn on the printer and print a status report to ensure proper function.

Replacing the Cutter (Option)



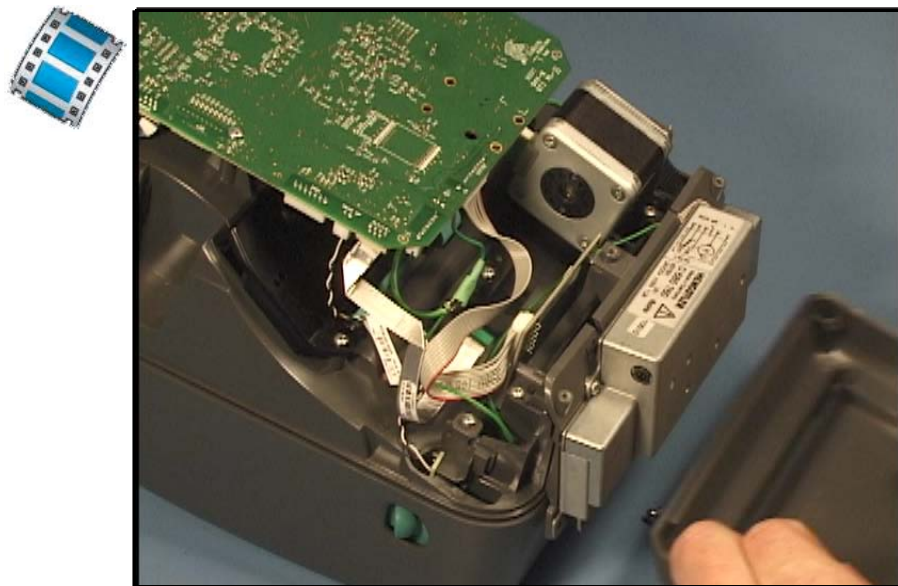
Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

You must remove the bottom case before performing this procedure.

Removal of the bezel

The cutter is located on the front of the printer below the media exit.

1. With the printer upside down, carefully pull the cutter's connector off of the Main Logic circuit board.
2. Disconnect the cutter's ground wire from the 'Y' connector joining the cutter and motor ground wires to connect to the Main Logic circuit board.
3. Use a #1 Phillips screwdriver to loosen and remove the screws on the left and right sides behind the cutter mount. Lift the cutter away from the printer.



Installation of the mechanism

1. Replace the cutter's circuit board.
2. From behind the cutter, lower the circuit board onto the mechanism.
3. Replace the screws and use a #1 Phillips screwdriver to tighten them.
4. Plug the mechanism's wire bundle into its connector on the cutter circuit board.
5. Check routing of the wires and make sure they are clear of the cutter cover.

6. Lower the cutter mechanism forward into the cover; make sure the frame's top edge fits under and guide on the cover.
7. From beneath, replace the two screws that secure the cover to the mechanism and use a #1 Phillips screwdriver to tighten them.

Installation of the bezel

1. With the printer upside down, align the cutter so that the mounting holes face the rear of the printer and the flat media exit faces the top of the printer.
2. Place the screws into the mounting holes.
3. Place the cutter against the printer.
4. Use a #1 Phillips screwdriver to tighten the screws.
5. Plug the ground wire into its post on the Main Logic circuit board.
6. Plug the wire bundle into its connector on the Main Logic circuit board.

Replace the bottom case. Reload media. Plug in power, turn on the printer and print a status report to ensure proper function.

Replacing the Hinges



Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

You must remove the bottom case before performing this procedure.

Removal

1. Place the printer upside down (on its top).
2. Use a #1 Phillips screwdriver to remove the two screws holding each hinge.
3. Rotate the hinge so that the mounting holes move away from the mechanism.
4. Slide the hinge along the axis of its rotation away from the printer.
5. Repeat these steps for the other hinge.

Installation

1. Align the hinge so that the wire bundle/ribbon cable fits through its slot
2. Press the hinge straight along its axis of rotation onto the printer.
3. Rotate the hinge to line up the mounting holes and is snug against the chassis.
4. Replace the two screws.
5. Repeat these steps for the other hinge.



Replace the bottom case. Open and close the printer to verify that the cables and hinges are not binding. Reload media. Plug in power, turn on the printer and print a status report to ensure proper function.

Replacing the Ribbon Carriage

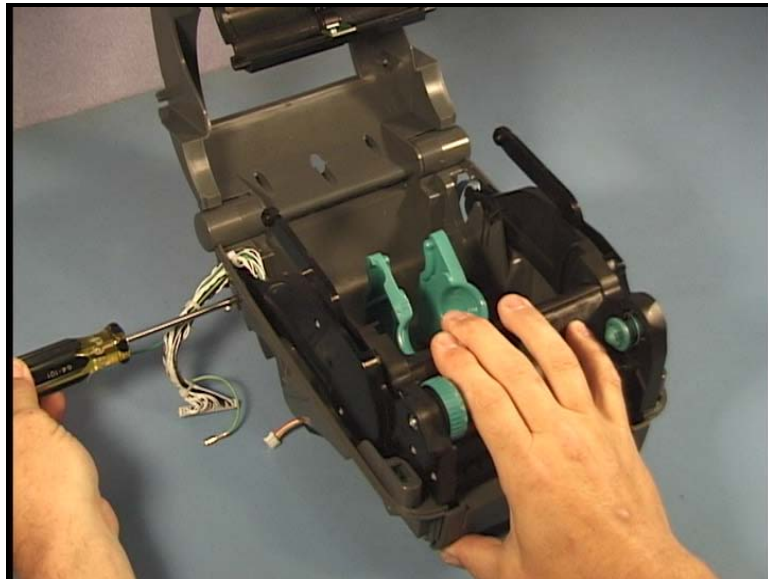


Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

You must remove the bottom case, top case and Main Logic circuit board before performing this procedure.

Removal

1. Cut the tie wrap holding the grounding wires and printhead wire bundle to the side of the print mechanism.
2. Use your fingers to pull the clip holding the ribbon sensor cable to the side of the print mechanism.
3. Detach both the left and right links on the ribbon carriage from the top, inner frame.
4. Open the print mechanism. The flapper will swing free of the ribbon carriage.
5. Use a #1 Phillips screwdriver to loosen the screws on both the left and right sides of the ribbon carriage. Remove the screws and their washers.
6. Lift the ribbon carriage away from the mechanism and carefully pull the wire bundles and cables through the lower, inner frame.



Installation

1. With the print mechanism open, lower the ribbon carriage into place carefully inserting the wire bundles and cables through the lower, inner frame.
2. Replace both the screws and washers the hold the ribbon carriage to the lower, inner frame. Use a #1 Phillips screwdriver to tighten them.
3. Lower the top, inner frame over the ribbon carriage; make sure the flapper slides into its guide tracks on the ribbon carriage.
4. Attach the links on both the left and right sides.
5. Secure the ribbon sensor cable to the bottom, inner frame using the clip.
6. Secure the print head wire bundle to the bottom, inner frame using a tie wrap. Snip off the excess.

Replace the Main Logic circuit board, top case and bottom case.

Clean the printhead.

Reload media. Plug in power, turn on the printer and print a status report to ensure proper function.

Replacing the Cover Assembly



Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

You must remove the bottom case, top case, Main Logic circuit board, and hinges before performing this procedure.

Removal

1. After removing the bottom case, top case, Main Logic circuit board, and hinges; detach both the left and right links on the ribbon carriage from the top, inner frame.
2. Pull the top, inner frame away from the (lower) print mechanism and ribbon carriage assembly.



Installation

1. Lower the top, inner frame over the ribbon carriage. Make sure the flapper slides into its guide track on the ribbon carriage.
2. Attach the links on both the left and right sides.

Replace the hinges, Main Logic circuit board, top case and bottom case.

Reload media. Plug in power, turn on the printer and print a status report to ensure proper function.

Replacing the Print Mechanism

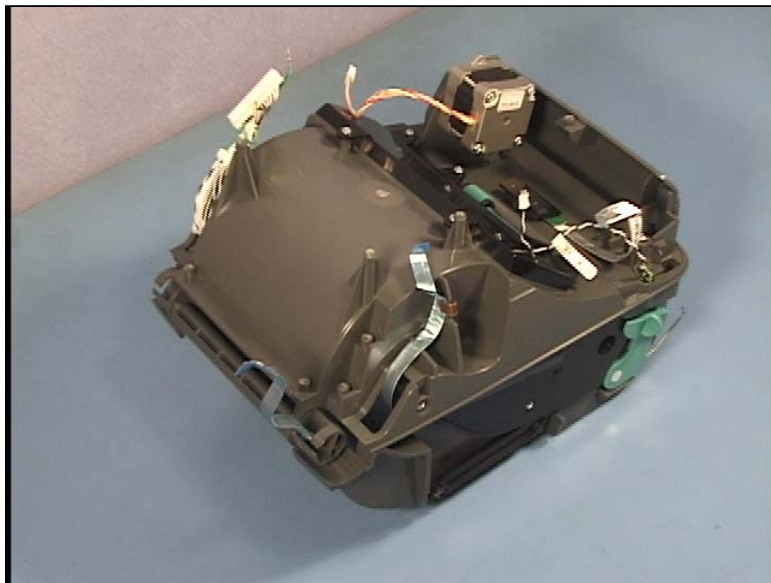


Caution • Prepare your work area by protecting against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

You must remove the bottom case, top case, Main Logic circuit board, hinges and ribbon carriage before performing this procedure.

Removal

1. With the top and bottom cases and Main Logic circuit board removed, continue disassembly by removing the clip holding the ribbon out sensor cable to the rib of the printer chassis.
2. Remove the hinges.
3. Pull the left and right links off the side of the top, inner frame.
4. Cut the tie wrap holding the printhead harness to the printer chassis.
5. Pull the inner frame and its flapper out of the ribbon carriage.
6. Remove the ribbon carriage.



Installation

1. Install the ribbon carriage.
2. Install the top, inner frame. Lower the top, inner frame over the ribbon carriage; make sure the flapper slides into its tracks on the ribbon carriage.
3. Attach the links on both the left and right sides of the top, inner frame to connect it to the ribbon carriage.
4. Re-attach the hinges.
5. Secure the ribbon out sensor's cable to the rib on the printer's chassis.
6. Attach the printhead wire harness and ground wires to the side the print mechanism.
7. Install the Main Logic circuit board, bottom case and top case on the printer.



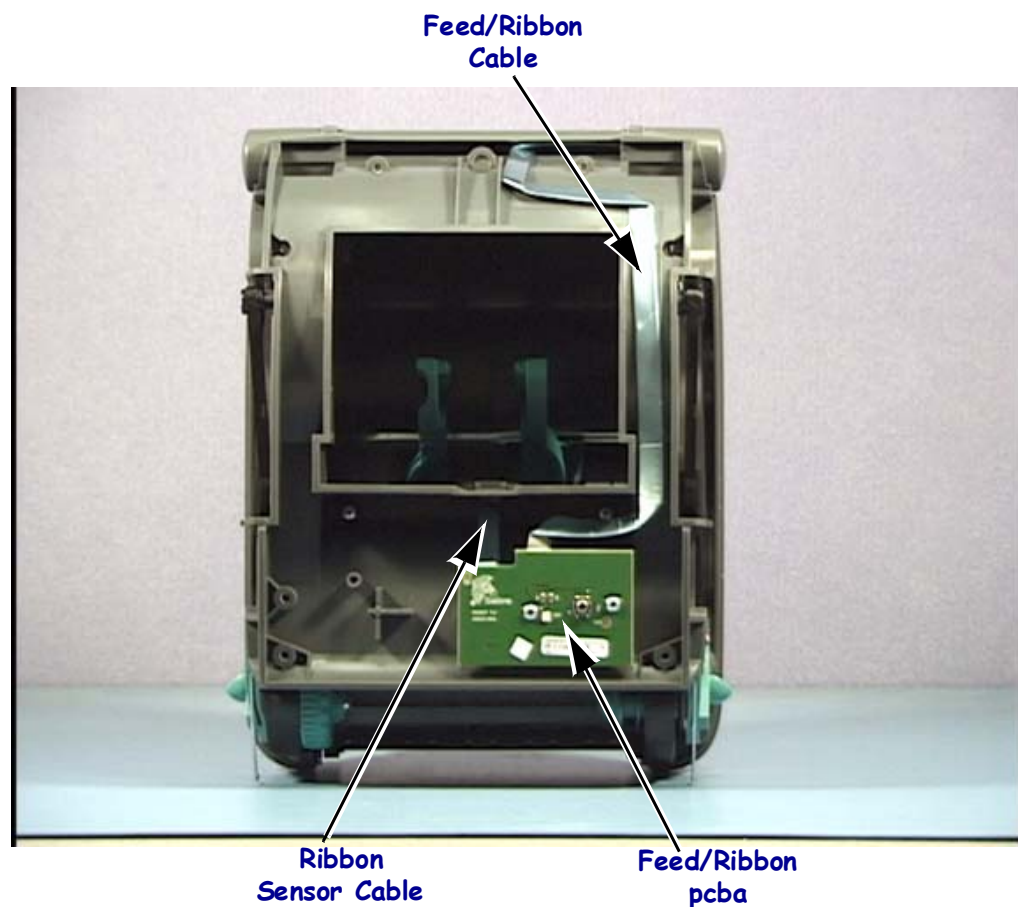
Clean the printhead.

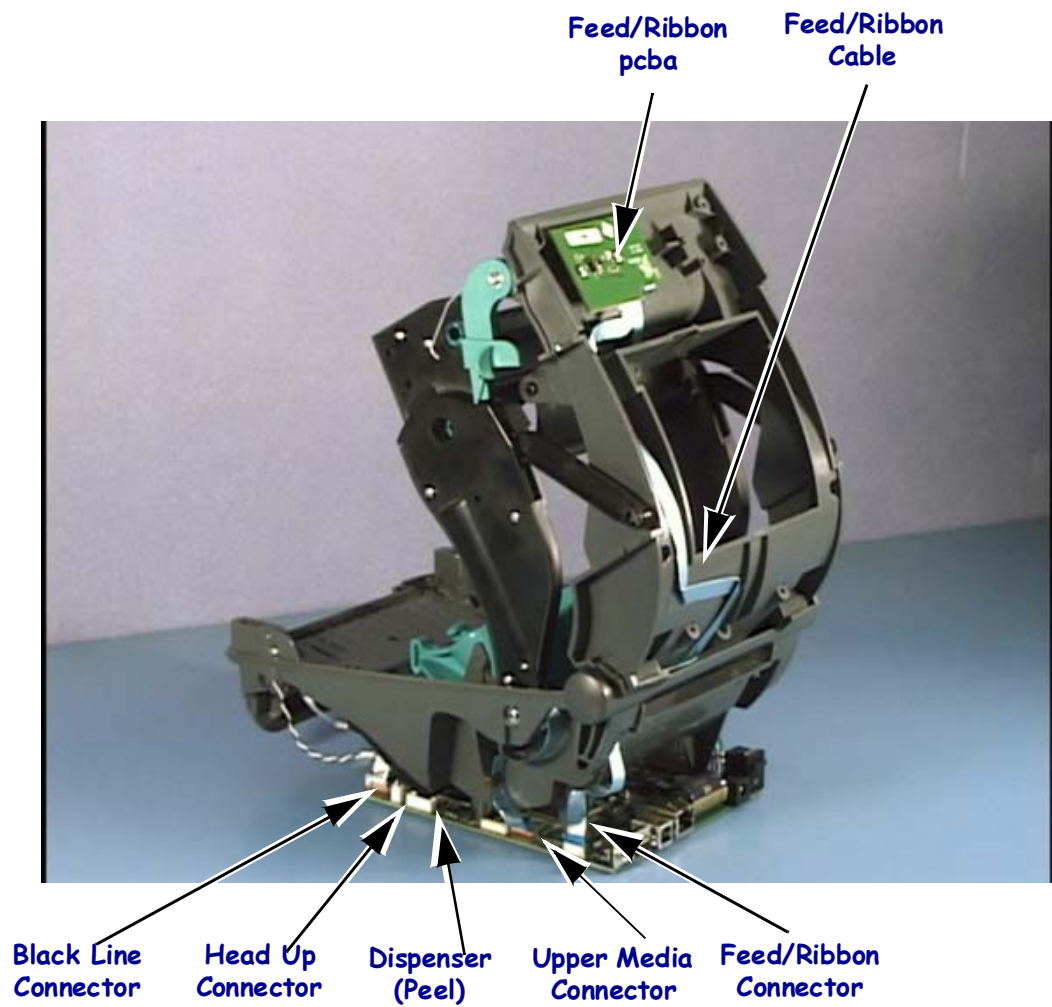
Reload media. Plug in power, turn on the printer and print a status report to ensure proper function.

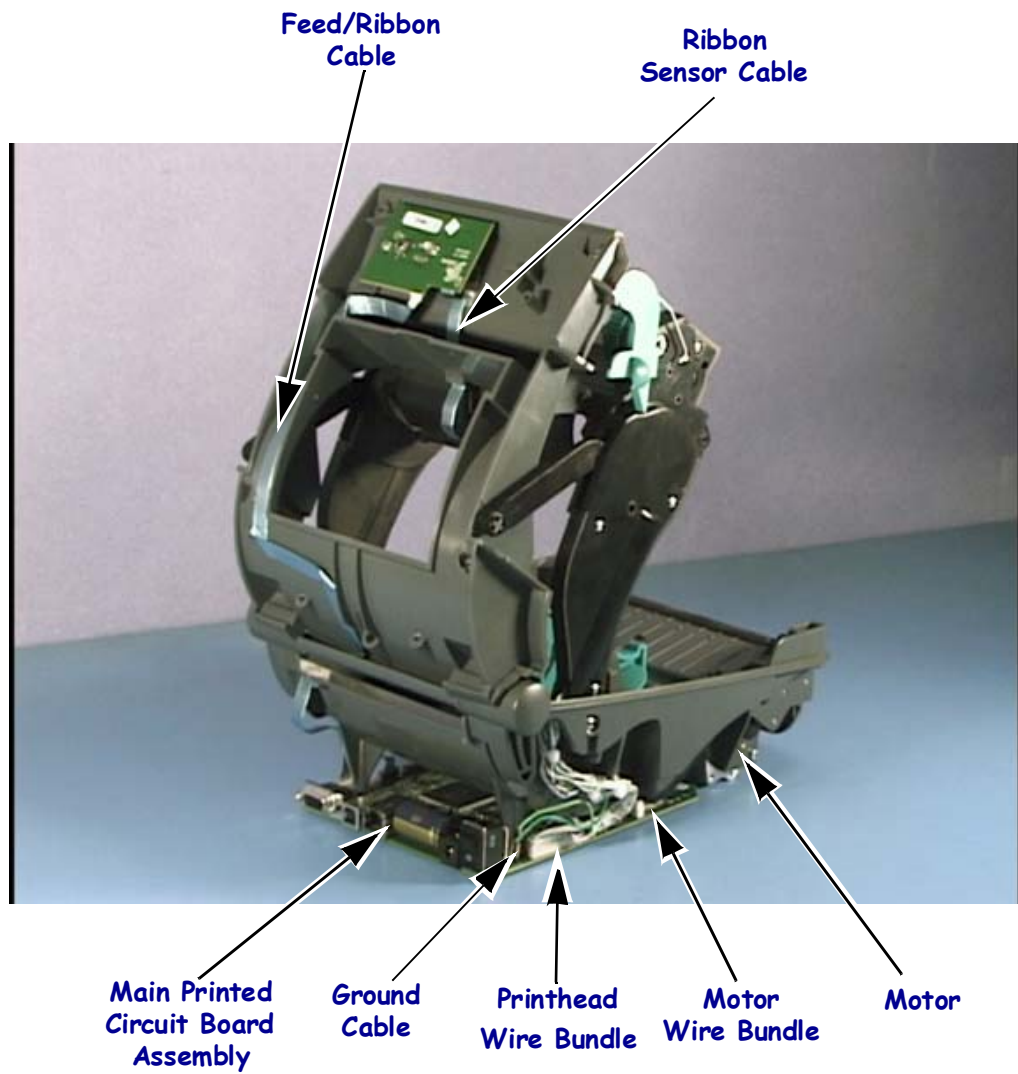
Cable Routing

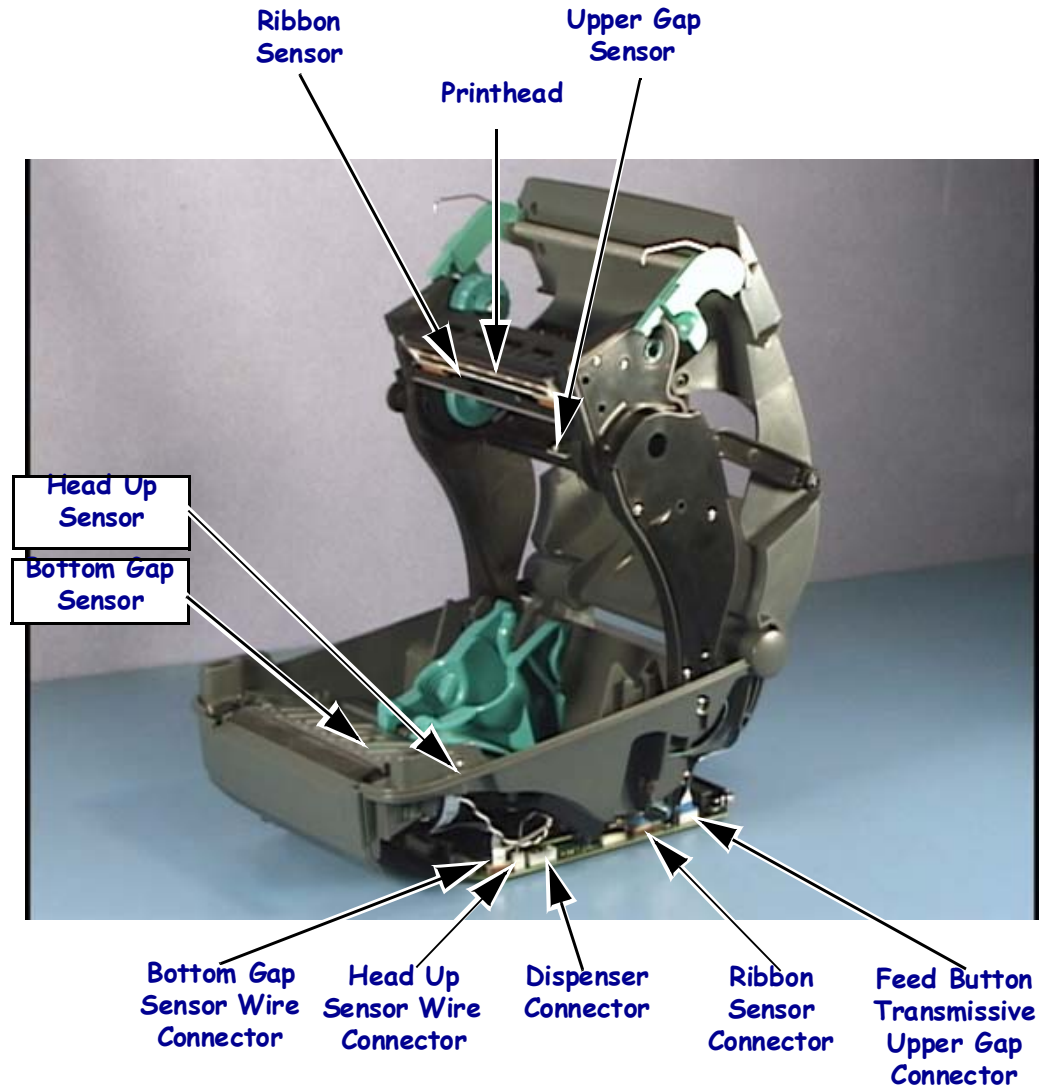
Print Mechanism

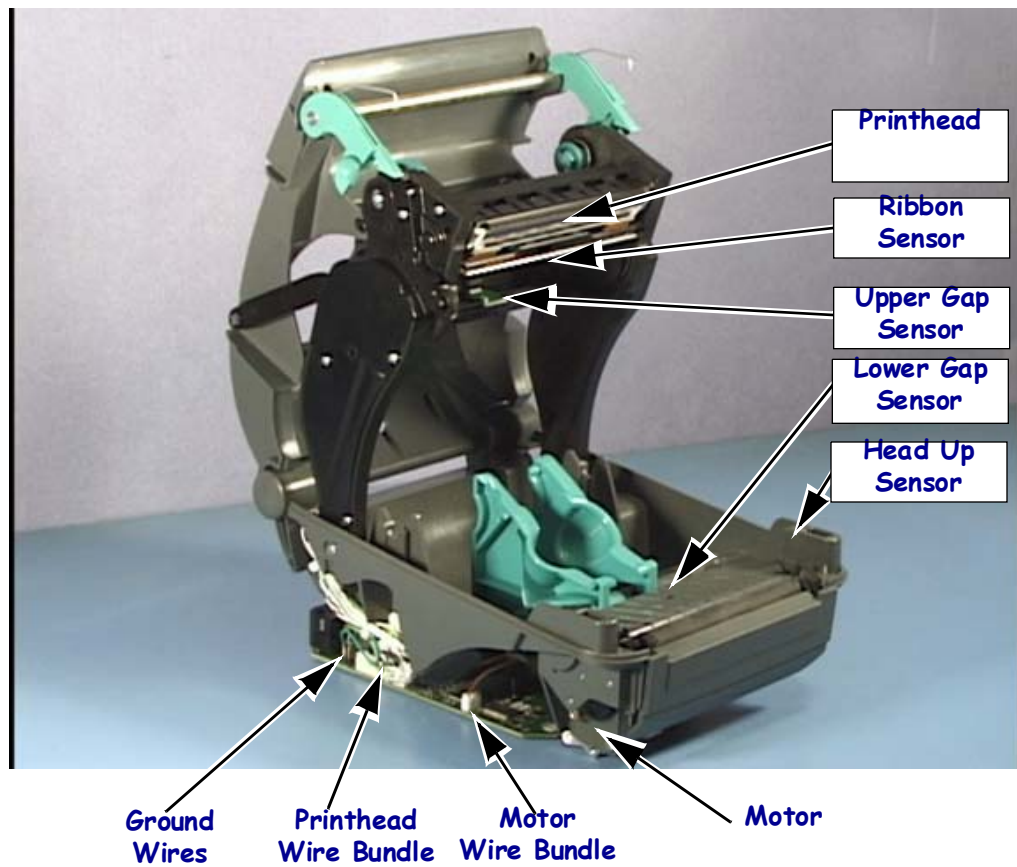
The following pictures show routing for the printer's electronic components on the printer's inner mechanism.











Main Printed Circuit Board Assembly

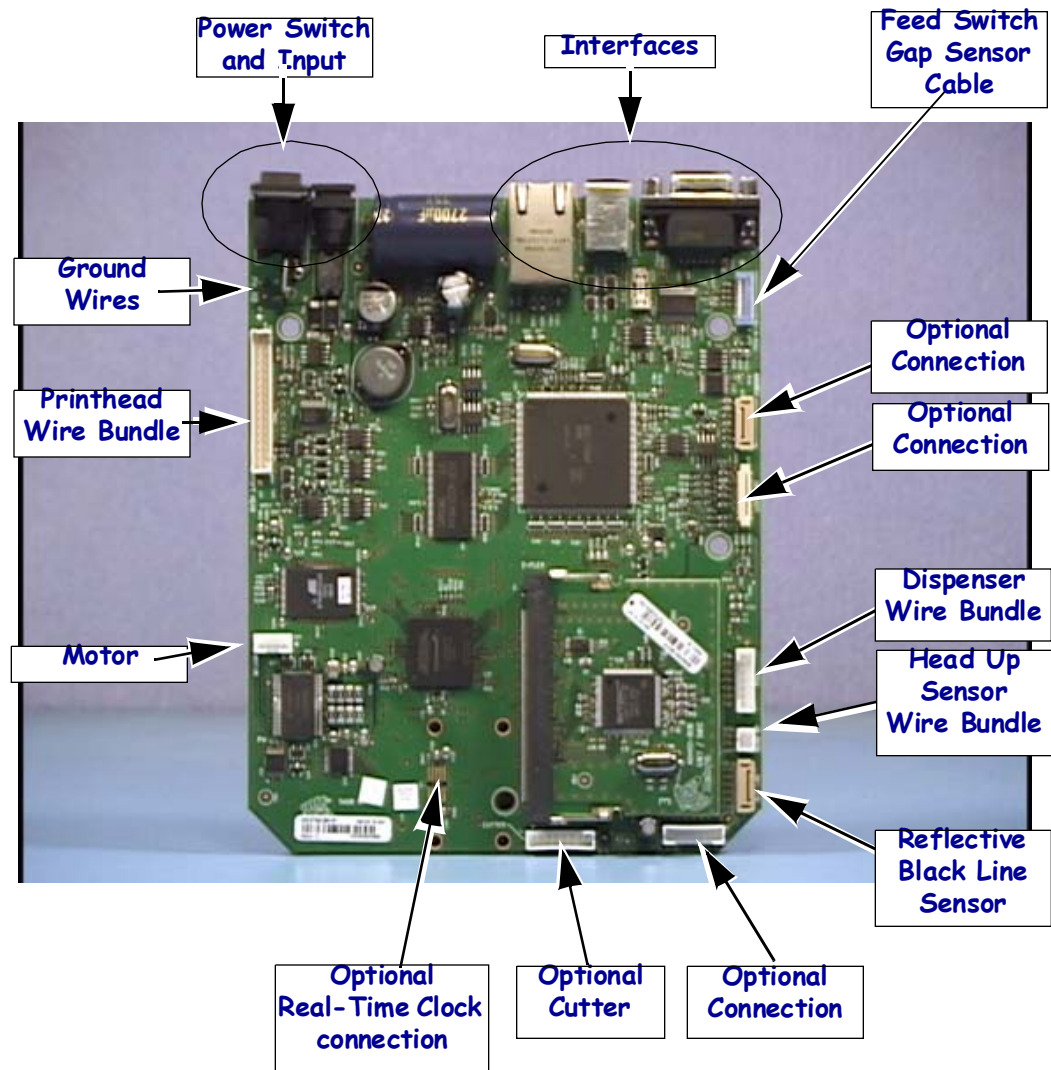


Figure 1 • Connectors on the Main Logic Board PCBA